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=> s egg powder
L1 801 EGG POWDER

=> s 11 and antibody
L2 30 L1 AND ANTIBODY

=> s 12 and feed
L3 7 L2 AND FEED

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L4          5 DUP REMOVE L3 (2 DUPLICATES REMOVED)
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20 g **egg powder** with an IgY concn. of 15 mg/g was fed up to day 14 to 18 of 20 calves. Calves had a max. IgY concn. of 1.9 .mu.g/mL serum if **egg powder** feeding started already during the 1st 12 h of life. Starting at a later time resulted in a redn. of IgY levels. Using the individual IgY elimination const. derived from a regression anal. of the IgY concn. curve, a mean IgY half time of 5.0 days was calcd. To prevent the absorption of heterologous **antibodies** and a possible systemic effect, **egg powder** for prophylactic purposes in newborn calves should be fed after the 1st 24, better 48 h post natum. Most important for the prophylactic effect of specific **antibodies** on infectious diarrhea is not their systemic but their high local intestinal availability.

L4 ANSWER 4 OF 5 MEDLINE

97415367 Document Number: 97415367. PubMed ID: 9271166. Reduced intestinal colonisation with F18-positive enterotoxigenic Escherichia coli in weaned pigs fed chicken egg **antibody** against the fimbriae. Zuniga A; Yokoyama H; Albicker-Rippinger P; Eggenberger E; Bertschinger H U. (Institute of Veterinary Bacteriology, University of Zurich, Switzerland.) FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY, (1997 Jul) 18 (3) 153-61. Journal code: 9315554. ISSN: 0928-8244. Pub. country: Netherlands. Language: English.

AB Newly weaned pigs were fed a basal diet containing either egg **antibody** against fimbriae F18 at a high or low level, control **egg powder** or no egg, and challenged with enterotoxigenic Escherichia coli with fimbriae F18. The challenge was repeated after termination of the **antibody** treatment. **Antibody**-containing **egg powder** was produced by vaccination of hens with semi-purified fimbriae of the two variants F18ab and F18ac. Pigs eating **egg powder** with **antibody** against the same fimbrial variant were fully protected, even if the vaccine for the hens was produced with a different serotype devoid of enterotoxins. The effect was dose-dependent. The high dose of **antibody** against the heterologous variant of fimbriae F18 reduced colonisation at a level which was not significant. Ingestion of egg **antibody** partially suppressed the build-up of anti-colonisation immunity. Oral application of egg **antibodies** offers a promising approach for the prevention of infectious diseases of the digestive tract.

L4 ANSWER 5 OF 5 MEDLINE

DUPPLICATE 1
96294427 Document Number: 96294427. PubMed ID: 8767731. [Prophylactic effect of specific egg yolk **antibodies** in diarrhea caused by Escherichia coli K88 (F4) in weaned piglets]. Prophylaktische Wirkung von spezifischen Dotterantikörpern bei Escherichia coli K88 (F4)-bedingten Durchfallerkrankungen von Absatzferkeln. Erhard M H; Bergmann J; Renner M; Hofmann A; Heinritzi K. (Institut fur Physiologie, Physiologische Chemie und Tierernährung, Tierärztlichen Fakultät, Ludwig-Maximilians-Universität München, Deutschland.) ZENTRALBLATT FÜR VETERINARMEDIZIN. REIHE A, (1996 Jun) 43 (4) 217-23. Journal code: 0331323. ISSN: 0514-7158. Pub. country: GERMANY: Germany, Federal Republic of. Language: German.

AB In this study, the protective effect of specific egg yolk **antibodies** on diarrhea caused by Escherichia coli K88 (F4) was investigated with 179 weaning piglets in a double-blind field trial. The piglets were divided into three groups. The **antibody** group received **egg powder** with specific **antibodies** to E. coli K88, K99, 987P, and rotavirus, while one control group was fed with **egg powder** without specific **antibodies** and a second control group received no **egg powder** at all. The piglets were fed ad libitum. The **egg powder** was offered in a 5% feed ration. Compared with the control groups, the piglets of the **antibody** group showed significant differences ($P < 0.05$, chi 2-test) in the parameters rate of diarrhea (17.2%) (**antibody** group) to 60.7% (control egg group) or 56.7%

L4 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2003 ACS

2000:628181 Document No. 133:192000 Specific egg yolk **antibodies**

IgY, the obtainment and use thereof. Kobilke, Hartmut (Germany). PCT Int. Appl. WO 2000052055 A1 20000908, 19 pp. DESIGNATED STATES: W: BY, CZ, DE, HU, JP, PL, SK, UA, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2.

APPLICATION: WO 2000-DE547 20000221. PRIORITY: DE 1999-19910159 19990226.

AB The invention relates to specific egg yolk **antibodies** IgY and the obtainment and use thereof for immunotherapy in animal breeding and animal prodn. Pullets are immunized and repeatedly boostered over the entire laying period of twelve to thirteen months. The obtained IgY **antibodies** in the form of whole **egg powder**, egg yolk powder or lyophilisates are given to the animal stock via ready **feed** or drinking water. The IgY **antibodies** can be used as the basis in monospecific ELISA kits for assocd. diagnostics and titer quality control as well as for titer development.

L4 ANSWER 2 OF 5 MEDLINE

1999153128 Document Number: 99153128. PubMed ID: 10028752. [Effect of

antibody-containing egg powder on development of active immunity in calves]. Untersuchung zum Einfluss eines antikorperhaltigen Volleipulvers auf die aktive Immunitatsausbildung bei Kalbern. Heckert H P; Bardella I; Hofmann W; Oltmer S. (Klinik fur Klauentiere der Freien Universitat Berlin.) DTW. DEUTSCHE TIERARZTLICHE WOCHENSCHRIFT, (1999 Jan) 106 (1) 10-4. Journal code: 7706565. ISSN: 0341-6593. Pub. country: GERMANY: Germany, Federal Republic of. Language: German.

AB Investigations on the influence of an **egg powder** containing **antibodies** was conducted on 15 young calves to measure the development of an active immune response. The product investigated, Globigen 88 (Lohmann Animal Health GmbH & Co. KG), was mixed with a milk replacer and administered to a group of 5 calves over 8 days twice a day. In addition, two control groups were established each consisting of 5 calves. The first group received the corresponding amount of **egg powder** without **antibodies** and the second group received exclusively milk replacer. In all groups serum **antibody** content was measured over 22 days. The average **antibody** content was decreased in the serum of the test groups. Avian immunoglobulins were not detectable. The development of active immunity in calves was not hindered. Furthermore a significant daily increase in weight was observed in test groups.

L4 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2003 ACS

1998:341722 Document No. 129:15616 Systemic availability of bovine immunoglobulin G and chicken immunoglobulin Y after feeding colostrum and **egg powder** to newborn calves. Erhard, M. H.; Goebel, E.; Lewan, B.; Loesch, U.; Stangassinger, M. (Institut Physiologie, Physiologische Chemie Tierernaehrung, Tieraerztliche Fakultaet, Ludwig-Maximilians-Universitaet, Munich, D-80539, Germany). Archives of Animal Nutrition, 50(4), 369-380 (German) 1997. CODEN: AANUET. ISSN: 0003-942X. Publisher: Harwood Academic Publishers.

AB The systemic availability of colostral bovine IgG (bIgG) and chicken IgY after feeding **egg powder** in newborn calves was investigated. During the feeding of colostrum, the bIgG concn. was highest at day 1 post natum with 9.3 mg/mL serum. The bIgG level was reduced continuously to 4.9 mg/mL serum at day 12 and remained nearly const. at 5.2 mg/mL at day 14. Total protein concns. in the serum plateaued at 56.2 mg/mL. The individual variation of bIgG concns. was very high on every day of the sampling period. Describing the individual bIgG concn. with regression curves, 2 groups with different bIgG elimination consts. (k) were obtained. In the group with k values of <-0.02 , a half-time of serum bIgG of 24.3 days and in the group with k values >-0.02 , a half-time of 68.5 days was calcd. Addnl. to colostrum,

(control group without **egg powder**), severity of symptoms (5.2-39.3% or 26.7%) and frequency of additional treatments (8.6-55.7% or 51.7%). Because of the additional treatments, no difference could be found in body-weight gain. In control groups, three piglets died, while no pigs died in the **antibody** group.

=> dup remove 12
PROCESSING COMPLETED FOR L2
L5 12 DUP REMOVE L2 (18 DUPLICATES REMOVED)

=> d i5 1-12 cbib abs

L5 ANSWER 1 OF 12 MEDLINE
2003150920 Document Number: 22553564. PubMed ID: 12666498. Studies on the effect of specific egg **antibodies** against Escherichia coli infections in piglets. Hennig-Pauka I; Stelljes I; Waldmann K H. (Klinik fur kleine Klauentiere und forensische Medizin und Ambulatorische Klinik, Tierarztliche Hochschule Hannover, D-30173 Hannover.. isabel.hennig@taho-hannover.de). DTW. DEUTSCHE TIERARZTLICHE WOCHENSCHRIFT, (2003 Feb) 110 (2) 49-54. Journal code: 7706565. ISSN: 0341-6593. Pub. country: Germany: Germany, Federal Republic of. Language: English.

AB The effect of chicken **egg powder** enriched with immunoglobulins specific for rotavirus antigen and fimbrial adhesions F4, F5, F6 of enterotoxigenic Escherichia coli (ETEC) (Globigen 66 S, Lohmann Animal Health, Cuxhaven, Germany) was studied in 465 sucking piglets on a commercial farm. Half of those piglets were given Globigen 66 S as an additive to milk replacer from day 2 until day 12 of life in addition to sows' milk. These piglets showed a higher intake of milk replacer and a lower prevalence of diarrhoea on days 2 and 3 of life. Statistical evaluation showed, that the effect of sows' milk on the duration of diarrhoea and on piglet weight gains was more pronounced than the effect of Globigen 66 S. Anti-ETEC F4-**antibody**-activities were measured using an indirect ELISA (enzyme-linked immunosorbent assay). There was an inverse relationship between the intensity of diarrhoea and colostral **antibody**-activity ($r = -0.2$). Comparison of binding affinities of avian and porcine **antibodies** for F4 showed only a limited common spectrum of epitopes, so, in all probability, they might complement each other in the intestine.

L5 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2003 ACS
2000:628181 Document No. 133:192000 Specific egg yolk **antibodies** IgY, the obtainment and use thereof. Kobilke, Hartmut (Germany). PCT Int. Appl. WO 2000052055 A1 20000908, 19 pp. DESIGNATED STATES: W: BY, CZ, DE, HU, JP, PL, SK, UA, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2.
APPLICATION: WO 2000-DE547 20000221. PRIORITY: DE 1999-19910159 19990226.

AB The invention relates to specific egg yolk **antibodies** IgY and the obtainment and use thereof for immunotherapy in animal breeding and animal prodn. Pullets are immunized and repeatedly boosterd over the entire laying period of twelve to thirteen months. The obtained IgY **antibodies** in the form of whole **egg powder**, egg yolk powder or lyophilisates are given to the animal stock via ready feed or drinking water. The IgY **antibodies** can be used as the basis in monospecific ELISA kits for assocd. diagnostics and titer quality control as well as for titer development.

L5 ANSWER 3 OF 12 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
2001:28731 Document No.: PREV200100028731. Studies on the prophylactic effect of feeding probiotics, pathogen-specific colostrum **antibodies** or egg yolk **antibodies** in newborn calves. Original Title: Untersuchungen zur prophylaktischen Wirkung der Verfuetterung eines

Probiotikums und von erregerspezifischen Kolostrum- und Dotterantikoerpern bei neugeborenen Kaelbern.. Erhard, M. H. (1); Leuzinger, K.; Stangassinger, M.. (1) Veterinaermedizinische Fakultaet, Veterinaer-Physiologisches Institut, Universitaet Leipzig, An den Tierkliniken 7, 04103, Leipzig: erhard@rz.uni-leipzig.de Germany. Journal of Animal Physiology and Animal Nutrition, (November, 2000) Vol. 84, No. 3-4, pp. 85-94. print. ISSN: 0931-2439. Language: German. Summary Language: English; German.

AB The prophylactic efficacy of feeding probiotics, specific egg yolk **antibodies** and specific colostrum **antibodies** on neonatal diarrhoea was investigated in a field trial with calves, grouped (n = 39/40 per group) according to the following treatments: Group I: feeding no additive; Group II: feeding probiotics (5 g powder/day with *Bacillus cereus* var. *toyoi*); Group III: feeding **egg powder** (10 g/day with specific egg yolk **antibodies** against rotavirus, coronavirus and *Escherichia coli* F5); Group IV: feeding colostrum **antibodies** (10 ml/day containing 1 g bovine immunoglobulins with specific **antibodies** against rotavirus, coronavirus and *E. coli* antigens); Group V: feeding **egg powder** together with probiotics (according to group II and III). The additives were given twice daily with the meal from day 2 to day 14 post-natum. The presence of infectious agents was proved in fecal samples of all calves. Intestinal infections with rotavirus (30.8% of the calves) predominated compared to those with coronavirus (7.1%), *E. coli* F5 (1.5%) and cryptosporidium (24.2%). In contrast to earlier studies, the manifestation of diarrhoea did not differ significantly between the five groups. Only the growth rate of the calves between day 2 and day 14 of life as a measure of their welfare showed treatment-specific differences. The control group (I) showed the lowest body weight gain of about 5.8 kg (SD 5.0), whereas in the treated groups it averaged 6.3 kg (SD 4.1, p = 0.60; group II), 6.8 kg (SD 4.3, p = 0.36; group III), 6.9 kg (SD 4.7, p = 0.61; group IV) and 7.7 kg (SD 4.9, p = 0.08; group V). Considering only the rotavirus-positive calves the body weight gain of the control group (I) was 3.5 kg (SD 4.8) and of the treated groups was 3.8 kg (SD 3.3, p = 0.65; II), 5.0 kg (SD 3.5, p = 0.54; III), 6.6 kg (SD 4.5, p = 0.05; IV) and 6.1 kg (SD 5.0, p = 0.13; V). Obviously, the feeding of **antibodies** from colostrum or from **egg powder** does increase the mean body weight gain. The feeding of probiotics alone has nearly no effect. However, in the combination with specific egg **antibodies** probiotics seem to have a synergistic effect. In serum from the 198 newborn calves the IgG concentration averaged 4.9 mg/ml serum (SD 3.3). From 93 dams of these calves a sample of the first colostrum could be obtained showing a mean IgG concentration of 22.0 mg/ml (SD 11.0). IgG levels in the colostrum and in the serum have been positively correlated ($r=0.37$, $p < 0.05$). Calves with a high intensity of diarrhoea had a significantly ($p = 0.01$) lower mean IgG serum level (3.7 mg/ml; n = 36; SD 2.5) than calves without diarrhoea (5.6 mg/ml n = 75; SD 4.0).

L5 ANSWER 4 OF 12 MEDLINE DUPLICATE 2
1999153128 Document Number: 99153128. PubMed ID: 10028752. [Effect of **antibody**-containing **egg powder** on development of active immunity in calves]. Untersuchung zum Einfluss eines antikorperhaltigen Volleipulvers auf die aktive Immunitätsausbildung bei Kalbern. Heckert H P; Bardella I; Hofmann W; Oltmer S. (Klinik fur Klauentiere der Freien Universitat Berlin.) DTW. DEUTSCHE TIERARZTLICHE WOCHENSCHRIFT, (1999 Jan) 106 (1) 10-4. Journal code: 7706565. ISSN: 0341-6593. Pub. country: GERMANY: Germany, Federal Republic of. Language: German.

AB Investigations on the influence of an **egg powder** containing **antibodies** was conducted on 15 young calves to measure the development of an active immune response. The product investigated, Globigen 88 (Lohmann Animal Health GmbH & Co. KG), was mixed with a milk replacer and administered to a group of 5 calves over 8

days twice a day. In addition, two control groups were established each consisting of 5 calves. The first group received the corresponding amount of **egg powder** without **antibodies** and the second group received exclusively milk replacer. In all groups serum **antibody** content was measured over 22 days. The average **antibody** content was decreased in the serum of the test groups. Avian immunoglobulins were not detectable. The development of active immunity in calves was not hindered. Furthermore a significant daily increase in weight was observed in test groups.

- L5 ANSWER 5 OF 12 MEDLINE DUPLICATE 3
1998005482 Document Number: 98005482. PubMed ID: 9735102. [Systemic availability of bovine immunoglobulin G and chicken immunoglobulin Y after feeding colostrum and whole **egg powder** to newborn calves]. Zur systemischen Verfugbarkeit von bovinem Immunglobulin G und Huhner-Immunglobulin Y aus gefuttertem Kolostrum bzw. Volleipulver bei neugeborenen Kalbern. Erhard M H; Gobel E; Lewan B; Losch U; Stangassinger M. (Institut fur Physiologie, Physiologische Chemie und Tierernahrung, Tierarztlichen Fakultat, Ludwig-Maximilians-Universitat Munchen, Germany.) ARCHIV FUR TIERERNAHRUNG, (1997) 50 (4) 369-80. Journal code: 0217641. ISSN: 0003-942X. Pub. country: Switzerland. Language: German.
AB In connection with a study on the prophylaxis of infectious diarrhea with specific egg yolk **antibodies**, the systemic availability of colostral bovine immunoglobulin G (bIgG) and chicken immunoglobulin Y (IgY) after feeding **egg powder** was investigated on 26 newborn calves from 23 different farms. Blood was sampled daily and at the same day time from these calves in the first 14 days of life. During the feeding of colostrum, the mean bIgG concentration was highest at day 1 post natum with a value of 9.3 mg/ml serum. Thereafter, the mean bIgG level was reduced continuously to a significant lower concentration of 4.9 mg/ml serum at day 12 post natum and remained nearly constant at 5.2 mg/ml till to the end of the observation period. Total protein concentrations in the serum did not change and plateaued at a mean value of 56.2 mg/ml (SD 11.2). The number of colostrum meals had no significant effect on the mean bIgG concentrations during that period. The individual variation of bIgG concentrations was very high on every day of the sampling period. The mean coefficient of variation was at 52.1 % (SD 5.7). After having described the individual bIgG concentration curves mathematically with a regression curve, two groups with significantly different bIgG elimination constants (k) could be obtained. Thus in one group (n = 10) with k-values of < -0.02 a mean half time of serum bIgG of 24.3 days (SD 4.6) was calculated. In the other group of calves (n = 16) with elimination constants of k > -0.02, a mean half time of 68.5 days (SD 36.7) could be calculated, possibly because these calves started earlier with their endogenous bIgG production. Additionally, to 18 of these calves 20 g **egg powder** with an IgY concentration of 15 mg/g was fed up to day 14. Calves had a maximal mean IgY concentration of 1.9 micrograms/ml serum if **egg powder** feeding started already during the first 12 hours of life. Starting at a later time resulted in a significant reduction of IgY levels. For example, the mean initial IgY concentration dropped to 0.035 micrograms/ml serum after having had the first **egg powder** application between 25 and 48 hours post natum. Using the individual IgY elimination constant derived from a regression analysis ($r^2 = 0.84$) of the IgY concentration curve, a mean IgY half time of 5.0 days (SD 2.5) could be calculated. To prevent the absorption of heterologous **antibodies** and consecutively, also to prevent a possible systemic effect, **egg powder** for prophylactic purposes in newborn calves should be fed after the first 24, better 48 hour, post natum. Most important for the prophylactic effect of specific **antibodies** on infectious diarrhea is not their systemic but their high local intestinal availability.

L5 ANSWER 6 OF 12 MEDLINE DUPLICATE 4
97415367 Document Number: 97415367. PubMed ID: 9271166. Reduced intestinal colonisation with F18-positive enterotoxigenic Escherichia coli in weaned pigs fed chicken egg **antibody** against the fimbriae. Zuniga A; Yokoyama H; Albicker-Rippinger P; Eggenberger E; Bertschinger H U. (Institute of Veterinary Bacteriology, University of Zurich, Switzerland.) FEMS IMMUNOLOGY AND MEDICAL MICROBIOLOGY, (1997 Jul) 18 (3) 153-61. Journal code: 9315554. ISSN: 0928-8244. Pub. country: Netherlands. Language: English.

AB Newly weaned pigs were fed a basal diet containing either egg **antibody** against fimbriae F18 at a high or low level, control **egg powder** or no egg, and challenged with enterotoxigenic Escherichia coli with fimbriae F18. The challenge was repeated after termination of the **antibody** treatment. **Antibody**-containing **egg powder** was produced by vaccination of hens with semi-purified fimbriae of the two variants F18ab and F18ac. Pigs eating **egg powder** with **antibody** against the same fimbrial variant were fully protected, even if the vaccine for the hens was produced with a different serotype devoid of enterotoxins. The effect was dose-dependent. The high dose of **antibody** against the heterologous variant of fimbriae F18 reduced colonisation at a level which was not significant. Ingestion of egg **antibody** partially suppressed the build-up of anti-colonisation immunity. Oral application of egg **antibodies** offers a promising approach for the prevention of infectious diseases of the digestive tract.

L5 ANSWER 7 OF 12 MEDLINE DUPLICATE 5
96294427 Document Number: 96294427. PubMed ID: 8767731. [Prophylactic effect of specific egg yolk **antibodies** in diarrhea caused by Escherichia coli K88 (F4) in weaned piglets]. Prophylaktische Wirkung von spezifischen Dotterantikörpern bei Escherichia coli K88 (F4)-bedingten Durchfallerkrankungen von Absatzferkeln. Erhard M H; Bergmann J; Renner M; Hofmann A; Heinritzi K. (Institut für Physiologie, Physiologische Chemie und Tierernährung, Tierärztlichen Fakultät, Ludwig-Maximilians-Universität München, Deutschland.) ZENTRALBLATT FÜR VETERINARMEDIZIN. REIHE A, (1996 Jun) 43 (4) 217-23. Journal code: 0331323. ISSN: 0514-7158. Pub. country: GERMANY: Germany, Federal Republic of. Language: German.

AB In this study, the protective effect of specific egg yolk **antibodies** on diarrhea caused by Escherichia coli K88 (F4) was investigated with 179 weaning piglets in a double-blind field trial. The piglets were divided into three groups. The **antibody** group received **egg powder** with specific **antibodies** to E. coli K88, K99, 987P, and rotavirus, while one control group was fed with **egg powder** without specific **antibodies** and a second control group received no **egg powder** at all. The piglets were fed ad libitum. The **egg powder** was offered in a 5% feed ration. Compared with the control groups, the piglets of the **antibody** group showed significant differences ($P < 0.05$, chi 2-test) in the parameters rate of diarrhea (17.2%) (**antibody** group) to 60.7% (control egg group) or 56.7% (control group without **egg powder**), severity of symptoms (5.2-39.3% or 26.7%) and frequency of additional treatments (8.6-55.7% or 51.7%). Because of the additional treatments, no difference could be found in body-weight gain. In control groups, three piglets died, while no pigs died in the **antibody** group.

L5 ANSWER 8 OF 12 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 6
1996:413183 Document No.: PREV199699135539. Dose-dependent effects of specific egg-yolk **antibodies** on diarrhea of newborn calves. Ozpinar, H.; Erhard, M. H.; Aytug, N.; Ozpinar, A.; Baklaci, C.; Karamuptuoglu, S.; Hofmann, A.; Losch, U. (1). (1) Inst. Physiol., Physiol. Chem. Anim. Nutr., Univ. Munich, Veterinaerstr. 13, 80539 Muenchen Germany. Preventive

Veterinary Medicine, (1996) Vol. 27, No. 1-2, pp. 67-73. ISSN: 0167-5877.
Language: English.

AB In a field trial on a farm in Turkey, we tested whether specific egg-yolk **antibodies** had a prophylactic effect on neonatal diarrhea. Owing to its **antibody** spectrum, this **egg powder** was very suitable for this farm since mainly rotavirus was identified. Regardless of the dosage (2 g, 4 g, or 8 g **egg powder**), the calves (n = 164) which received specific egg-yolk **antibodies** via the whole egg during the first 14 days of life showed significant improvements in risk and duration of diarrhea and in body weight gain compared with calves of the control group (n = 80) which had not received any **egg powder**. These significant differences in body weight still persisted after 3 months of life. The mortality risk in the control group amounted to 8.8%, while in all **egg powder** groups (n = 164) only one calf died as a result of diarrhea. Breed-dependent differences in the parameters were not observed.

L5 ANSWER 9 OF 12 MEDLINE DUPLICATE 7
96123601 Document Number: 96123601. PubMed ID: 8525649. [Intestinal absorption of homologous and heterologous immunoglobulin G in newborn calves]. Untersuchungen zur intestinalen Absorption von homologem und heterologem Immunglobulin G bei neugeborenen Kalbern. Erhard M H; Losch U; Stangassinger M. (Institut fur Physiologie, Physiologische Chemie und Tierernahrung, Ludwig-Maximilians-Universitat, Munchen.) ZEITSCHRIFT FUR ERNAHRUNGSSWISSENSCHAFT, (1995 Jun) 34 (2) 160-3. Journal code: 0413632. ISSN: 0044-264X. Pub. country: GERMANY: Germany, Federal Republic of. Language: German.

AB Studying the prophylactic effects of specific yolk **antibodies** against diarrhea in newborn calves, also the intestinal absorption of unspecific heterogeneous avian **antibodies** as well as their effects on the uptake of maternal bovine colostral **antibodies** (bIgG) was investigated. Two groups of newborn calves received **egg powder** (16 g or 8 g per day) for the first 10 days of their life beginning with the first meal. A third group was kept as a control without any **egg powder** in their diet. Blood samples (5 to 10 calves per sampling time) were taken from 123 calves at 6, 12, 24, 48, or 96 h postnatally. With both doses the highest chicken IgG (cIgG) levels (3.1 micrograms resp. 1.2 micrograms per ml serum) have been measured 12 h after birth. These concentrations decreased continuously to the levels of 1.1 micrograms resp. 0.2 micrograms cIgG per ml serum at 96 h postnatally. The uptake into blood at 6 h postnatally has roughly been estimated as approximately 23% (bIgG) and 7% resp. 6% (cIgG) of the IgG dosages given with the first meal. The time-course (6 to 96 h) of the bIgG level in blood was quite stable, plateauing already after 6 h at a mean of 5.9 mg per ml serum. Significant differences between the bIgG levels of calves with yolk **antibodies** in their diet (6.2 resp. 6.1 mg bIgG per ml serum) and those of the control group (5.4 mg per ml serum) could not be observed. (ABSTRACT TRUNCATED AT 250 WORDS)

L5 ANSWER 10 OF 12 SCISEARCH COPYRIGHT 2003 ISI (R)
94:83892 The Genuine Article (R) Number: MP387. A FIELD TRIAL OF THE TREATMENT OF DIARRHEA IN PIGLETS WITH SPECIFIC EGG **ANTIBODIES**. KELLNER J; ERHARD M H; RENNER M; LOSCH U (Reprint). UNIV MUNICH, INST TIERPHYSIOL PHYSIOL CHEM & ERNAHRUNGSPHYSIOL, VET STR 13, D-80539 MUNICH, GERMANY (Reprint); UNIV MUNICH, INST TIERPHYSIOL PHYSIOL CHEM & ERNAHRUNGSPHYSIOL, VET STR 13, D-80539 MUNICH, GERMANY. TIERARZTLICHE UMSCHAU (JAN 1994) Vol. 49, No. 1, pp. 31-34. ISSN: 0049-3864. Pub. country: GERMANY. Language: German.

AB *ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*
E. coli K88, K99 and 987P and rotavirus specific chicken egg **antibodies** were administered to piglets with diarrhoea, on two

farms. Oral administration of antigen specific egg yolk powder resulted in a reduction in the duration of diarrhoea to 1.3 days. Piglets receiving a control **egg powder** prepared from non immunised chickens experienced a clinical duration of 1.8 days, compared to 1.9 days for untreated piglets. Piglets receiving the antigen specific **egg powder** were all cured after one day, those receiving the control **egg powder** after 2.6 days and those receiving no treatment after 3.5 days. The trials demonstrated the therapeutic effect of the oral administration of antigen specific egg yolk powder.

- L5 ANSWER 11 OF 12 MEDLINE DUPLICATE 8
94092097 Document Number: 94092097. PubMed ID: 8267566. [New
possibilities in oral immunoprophylaxis of newborn diarrhea in calves--a field study using specific egg **antibodies**]. Neue Moglichkeiten in der oralen Immunprophylaxe der Neugeborenendiarrhoe des Kalbes--ein Feldversuch mit spezifischen Eiantikorpern. Erhard M H; Kellner J; Eichelberger J; Losch U. (Institut fur Physiologie, Physiologische Chemie und Ernahrungsphysiologie, Tierarztlichen Fakultat, Ludwig-Maximilians Universitat Munchen.) BERLINER UND MUNCHENER TIERARZTLICHE WOCHENSCHRIFT, (1993 Nov) 106 (11) 383-7. Journal code: 0003163. ISSN: 0005-9366. Pub. country: GERMANY: Germany, Federal Republic of. Language: German.
AB To investigate the effect of oral immunoprophylaxis in diarrhea of newborn calves **egg powder** with **antibodies** specific to E. coli K99 (ETEC) and rotavirus were used in a field trial in south west Germany. Fourteen farms with a total of 105 calves were selected. **Egg powder** (21 g per day) was fed as a supplement to the regular diet for the first 14 days after birth. Animals of the control group received **egg powder** derived from hens not immunized with the antigens. Frequency, duration and severity of diarrhea, fecal dry matter and weight gain were examined in order to evaluate the influence of the specific **egg powder**. Using a Lactovac test kit pathogens were detected in the feces of 76.2% of the calves, with 24.7% infected with E. coli K99, 39.1% with rotavirus, 19.0% with coronavirus and 32.4% with cryptosporidia. An overall reduction in diarrhea frequency from 68.5% to 52.9% was observed in calves fed with specific **antibodies**. Animals with an E. coli K99 infection showed a reduction from 92.3% to 30.7% and those infected exclusively with E. coli K99 from 83.3% to 0%. The duration of diarrhea was significantly reduced (42 h) in animals fed with specific **antibodies** in comparison to the control animals (60 h). With the exception of animals infected with coronavirus a marked reduction in the severity of diarrhea was observed in **antibody** treated calves. During the first 14 days after birth **antibody** treated calves showed a weight gain of 5.6 kg on average in comparison with 3.5 kg in the control group. (ABSTRACT TRUNCATED AT 250 WORDS)

- L5 ANSWER 12 OF 12 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 9
1991:415528 Document No.: BA92:82493. A NOVEL TECHNIQUE FOR ENTRAPMENT OF HYBRIDOMA CELLS IN SYNTHETIC THERMALLY REVERSIBLE POLYMERASE. MARKVICHEVA E A; KUZ'KINA I F; PASHKIN I I; PLECHKO T N; KIRSH Y E; ZUBOV V P. SHEMYAKIN INST. BIOORGANIC CHEM., USSR ACAD. SCI., UL. MIKLUKHO-MAKLAYA, 161/10, 117871 MOSCOW, USSR.. BIOTECHNOL TECH, (1991) 5 (3), 223-226. CODEN: BTECE6. ISSN: 0951-208X. Language: English.
AB A new technique for entrapment of cells in thermally reversible polymer (poly-N-vinylcapro lactam - PVCl) has been developed. Using stabilizers, such as ovalbumin, sodium carboxymethylcellulose or **egg powder** were necessary to give structures that were stable upon stirring carriers. Two hybridoma lines, in particular, 34B and 1A10 cells were entrapped in gel and produced monoclonal **antibodies** IgG and IgM classes, respectively, against *Arabis mosaic virus*.

=> d his

(FILE 'HOME' ENTERED AT 13:19:03 ON 19 APR 2003)

FILE 'MEDLINE, EMBASE, BIOSIS, SCISEARCH, CAPLUS' ENTERED AT 13:19:17 ON
19 APR 2003

L1 801 S EGG POWDER
L2 30 S L1 AND ANTIBODY
L3 7 S L2 AND FEED
L4 5 DUP REMOVE L3 (2 DUPLICATES REMOVED)
L5 12 DUP REMOVE L2 (18 DUPLICATES REMOVED)

=> s l1 and IgA

L6 0 L1 AND IGA

=> s l1 and IgM

L7 5 L1 AND IGM

=> dup remove 17

PROCESSING COMPLETED FOR L7

L8 2 DUP REMOVE L7 (3 DUPLICATES REMOVED)

=> d 18 1-2 cbib abs

L8 ANSWER 1 OF 2 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
1998:136449 Document No.: PREV199800136449. Dietary effect of egg yolk powder
prepared from iodine and DHA-enriched eggs on immunoglobulin productivity
of Sprague-Dawley rats. Hung, Pham; Yunoki, Shin-Ichi; Mori, Mitsuo; Yuki,
Takashi; Nonaka, Michiko; Sugano, Michihiro; Yamada, Koji. Lab. Food
Chem., Fac. Agric., Kyushu Univ., Fukuoka 812-81 Japan. Science Bulletin
of the Faculty of Agriculture Kyushu University, (Dec., 1997) Vol. 52, No.
1-2, pp. 27-33. ISSN: 0368-6264. Language: Japanese. Summary Language:
English.

AB To clarify whether DHA-enriched or iodine egg has anti-allergic effect or
not, Sprague-Dawley rat were fed with egg yolk powder of these health
oriented eggs at the 10% level and the effects on serum immunoglobulin
level and immunoglobulin productivity of lymphocytes were examined.
Feeding of iodine or DHA-enriched **egg powder** increased
IgG productivity of spleen lymphocyte and iodine **egg**
powder feeding strongly activated **IgM** production of the
lymphocyte. In mesenteric lymph node lymphocytes, significant enhancement
of IgG productivity was observed only in DHA-enriched group, while
IgM productivity significantly enhanced in all egg yolk fed groups
including normal egg. On the other hand, there was no remarkable effect on
IgE productivity in both lymphocytes. These results suggest that
immunostimulatory effect via activation of IgG and **IgM**
production has important meaning in these egg yolk powder of health
oriented eggs.

L8 ANSWER 2 OF 2 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 2
1991:415528 Document No.: BA92:82493. A NOVEL TECHNIQUE FOR ENTRAPMENT OF
HYBRIDOMA CELLS IN SYNTHETIC THERMALLY REVERSIBLE POLYMERASE. MARKVICHEVA
E A; KUZ'KINA I F; PASHKIN I I; PLECHKO T N; KIRSH Y E; ZUBOV V P.
SHEMYAKIN INST. BIOORGANIC CHEM., USSR ACAD. SCI., UL. MIKLUKHO-MAKLAYA,
161/10, 117871 MOSCOW, USSR.. BIOTECHNOL TECH, (1991) 5 (3), 223-226.
CODEN: BTECE6. ISSN: 0951-208X. Language: English.

AB A new technique for entrapment of cells in thermally reversible polymer
(poly-N-vinylcaproclactam - PVC1) has been developed. Using stabilizers,
such as ovalbumin, sodium carboxymethylcellulose or **egg**
powder were necessary to give structures that were stable upon
stirring carriers. Two hybridoma lines, in particular, 34B and 1A10 cells
were entrapped in gel and produced monoclonal antibodies IgG and
IgM classes, respectively, against *Arabis mosaic virus*.

=> s egg antibody
L9 253 EGG ANTIBODY

=> s l9 and albumin
L10 3 L9 AND ALBUMIN

=> dup remove l10
PROCESSING COMPLETED FOR L10
L11 3 DUP REMOVE L10 (0 DUPLICATES REMOVED)

=> d l11 1-3 cbib abs

L11 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2003 ACS
1986:441067 Document No. 105:41067 Manufacture and use of fowl **egg**
antibodies. Polson, Alfred (South African Inventions Development
Corp., S. Afr.). U.S. US 4550019 A 19851029, 23 pp. Cont.-in-part of
U.S. 4,357,272. (English). CODEN: USXXAM. APPLICATION: US 1982-399094
19820716. PRIORITY: US 1979-20786 19790315.

AB Immunol. prepns. are prepnd. by immunizing hens with an immunogen to a stage of hyperimmunization. The immunogenicity of the immunogen can be enhanced by enlarging the size of the immunogen. The IgY antibodies were isolated from the egg yolk. Thus, pullets received an i.m. injection of an antibody, such as a plant virus, and were reinjected at regular intervals until a stage of hyper immunization was achieved. Eggs were then gathered over a period of 9 mo and stored at 4.degree. until the yolks were processed. The yolks were collected from several eggs, washed to remove all of the **albumin**, and dild. with an equal vol. of buffer. Pulverized polyethylene glycol (PEG) was add to 3.5%, to remove the lipoidal matter and casein-like protein from the yolk. After centrifugation at 12,000 g the yolk supernatant was treated further with PEG to a final concn. of 12%. At this concn. the PEG caused the complete displacement of the IgY. After centrifugation the IgY-contg. fraction was subjected to the PEG treatment again to remove any remaining contaminants. These antibodies can be used in the diagnosis and treatment of disease.

L11 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS
1974:534511 Document No. 81:134511 Development of humoral immunity in lethally irradiated mice reconstituted with fetal liver. Sherwin, William K.; Rowlands, David T., Jr. (Sch. Med., Univ. Pennsylvania, Philadelphia, PA, USA). Journal of Immunology, 113(4), 1353-60 (English) 1974. CODEN: JOIMA3. ISSN: 0022-1767.

AB A model system of ontogeny was utilized to investigate the development of humoral immunity. Lethally irradiated adult C3H mice were reconstituted with syngeneic fetal liver. These mice were immunized at various times after reconstitution with a series of antigens: the bacteriophages F2 and X-174; the hapten carrier complexes 2,4-dinitrophenyl-bovine serum **albumin** and fluorescein bovine serum **albumin**, and the small proteins, hen egg lysozyme, sperm whale myoglobin, and bovine pancreatic RNase. Subsequent antibody prodn. to the bacteriophage was assayed by bacteriophage neutralization. To detect antibody directed against the haptens or small proteins, the appropriate hapten or protein was 1st coupled to T4, and then a modified bacteriophage neutralization technique was employed. A hierarchy of responsiveness resulted from the ordered maturation of lymphopoietic elements in the fetal liver inoculum.

L11 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2003 ACS
1947:37868 Document No. 41:37868 Original Reference No. 41:7501a-c Reagins: preliminary report on experimental evidence in support of a new theory of their nature. I. Immunochemical studies of reagin. Miller, Hyman; Campbell, Dan H. (California Inst. of Technol., Pasadena). Ann. Allergy, 5, 236-42,246 (Unavailable) 1947.

AB Serum from egg-sensitive individuals contains a type of antibody which attaches to egg **albumin** and is then incorporated in the ppt. formed by ovalbumin and rabbit antiovalbumin. In some instances 0.1 ml. of the reagin serum increases the pptd. protein by 200 .gamma.. Reagin is considered to be an antibody which lacks a sufficient no. of combining groups or which has groups too weak to form insol. complexes with its antigen but which can attach itself to a pptg. complex of strong antibody and antigen; it is probably a unipolar antibody.

=> s egg IgA
L12 5 EGG IGA

=> dup remove 112
PROCESSING COMPLETED FOR L12
L13 2 DUP REMOVE L12 (3 DUPLICATES REMOVED)

=> d l13 1-2 cbib abs

L13 ANSWER 1 OF 2 MEDLINE DUPLICATE 1
1999146457 Document Number: 99146457. PubMed ID: 10023852. Cytokine mRNA expression in lymphoid organs associated with the expression of IgA response in the rat. Petitprez K; Khalife J; Cetre C; Fontaine J; Lafitte S; Capron A; Grzych J M. (INSERM U167 Centre d'Immunologie et de Biologie Parasitaire, Institut Pasteur, Lille, France.) SCANDINAVIAN JOURNAL OF IMMUNOLOGY, (1999 Jan) 49 (1) 14-20. Journal code: 0323767. ISSN: 0300-9475. Pub. country: ENGLAND: United Kingdom. Language: English.

AB The T-helper dependency of the IgA antibody response has been investigated in rats injected intravenously with Schistosoma mansoni eggs. This method, allowing the trapping of parasite eggs in the lung tissue, led to a strong anti-**egg IgA** antibody response in the bronchoalveolar lavage but not in the serum. To characterize the cytokine pattern associated with the IgA response, kinetic analysis of the cytokine mRNA expression in the lungs, periaortic nodes (PN) and spleen was undertaken. Under such conditions, significant levels of mRNA encoding IL-5 and IL-10 were recorded in spleen during the early period following egg injection, as well as a more prolonged expression of TGF-beta and IL-6 mRNAs. However, neither IFN-gamma nor IL-4 mRNA could be detected in these samples. Finally, in lungs and in PN, RT-PCR analysis revealed delayed production of cytokine mRNA. Taken together our data suggest that the rat mucosal IgA antibody response is predominantly linked to a Th2 response.

L13 ANSWER 2 OF 2 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
1996:156202 Document No.: PREV199698728337. Immunoglobulin A response in murine schistosomiasis: Stimulatory role of egg antigens. Poulain-Godefroy, Odile (1); Gaubert, Sophie; Lafitte, Sophia; Capron, Andre; Grzych, Jean-Marie. (1) INSERM U167, Inst. Pasteur, 1 Pr. Calmette, 59019 Lille Cedex France. Infection and Immunity, (1996) Vol. 64, No. 3, pp. 763-768. ISSN: 0019-9567. Language: English.

AB The immunoglobulin G (IgG) and IgA antibody responses to different Schistosoma mansoni antigens have been determined in chronically infected mice as well as in unisexually infected animals. With a panel of enzyme-linked immunosorbent assays (ELISAs), soluble antigens from furcocercariae, adult worms, and **eggs IgA** antibody responses to the antigens tested, which increased after egg deposition. In unisexual infections, no antibody response was observed only in the bisexual infections. Histological analysis performed on bisexual infections led to the observation of eggs and granulomatous lesions within the Peyer's patch follicles, which are essential sites for the induction of mucosal immunity in the intestine. These data suggest a relationship between egg deposition and the induction of the IgA antibody response toward schistosomes.

=> s fowl IgA
L14 5 FOWL IGA

=> dup remove 114
PROCESSING COMPLETED FOR L14
L15 2 DUP REMOVE L14 (3 DUPLICATES REMOVED)

=> d 15 1-2 cbib abs

L5 ANSWER 1 OF 12 MEDLINE
2003150920 Document Number: 22553564. PubMed ID: 12666498. Studies on the effect of specific egg **antibodies** against Escherichia coli infections in piglets. Hennig-Pauka I; Stelljes I; Waldmann K H. (Klinik fur kleine Klauentiere und forensische Medizin und Ambulatorische Klinik, Tierarztliche Hochschule Hannover, D-30173 Hannover.. isabel.hennig@tih-hannover.de) . DTW. DEUTSCHE TIERARZTLICHE WOCHENSCHRIFT, (2003 Feb) 110 (2) 49-54. Journal code: 7706565. ISSN: 0341-6593. Pub. country: Germany: Germany, Federal Republic of. Language: English.

AB The effect of chicken **egg powder** enriched with immunoglobulins specific for rotavirus antigen and fimbrial adhesions F4, F5, F6 of enterotoxigenic Escherichia coli (ETEC) (Globigen 66 S, Lohmann Animal Health, Cuxhaven, Germany) was studied in 465 sucking piglets on a commercial farm. Half of those piglets were given Globigen 66 S as an additive to milk replacer from day 2 until day 12 of life in addition to sows' milk. These piglets showed a higher intake of milk replacer and a lower prevalence of diarrhoea on days 2 and 3 of life. Statistical evaluation showed, that the effect of sows' milk on the duration of diarrhoea and on piglet weight gains was more pronounced than the effect of Globigen 66 S. Anti-ETEC F4-**antibody**-activities were measured using an indirect ELISA (enzyme-linked immunosorbent assay). There was an inverse relationship between the intensity of diarrhoea and colostral **antibody**-activity ($r = -0.2$). Comparison of binding affinities of avian and porcine **antibodies** for F4 showed only a limited common spectrum of epitopes, so, in all probability, they might complement each other in the intestine.

L5 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2003 ACS
2000:628181 Document No. 133:192000 Specific egg yolk **antibodies** IgY, the obtainment and use thereof. Kobilke, Hartmut (Germany). PCT Int. Appl. WO 2000052055 A1 20000908, 19 pp. DESIGNATED STATES: W: BY, CZ, DE, HU, JP, PL, SK, UA, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2.
APPLICATION: WO 2000-DE547 20000221. PRIORITY: DE 1999-19910159 19990226.

AB The invention relates to specific egg yolk **antibodies** IgY and the obtainment and use thereof for immunotherapy in animal breeding and animal prodn. Pullets are immunized and repeatedly boostered over the entire laying period of twelve to thirteen months. The obtained IgY **antibodies** in the form of whole **egg powder**, egg yolk powder or lyophilisates are given to the animal stock via ready feed or drinking water. The IgY **antibodies** can be used as the basis in monospecific ELISA kits for assocd. diagnostics and titer quality control as well as for titer development.

=> s whole egg powder
L16 309 WHOLE EGG POWDER

=> s 116 and animal stock
L17 1 L16 AND ANIMAL STOCK

=> d 117 cbib abs

L17 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS

2000:628181 Document No. 133:192000 Specific egg yolk antibodies IgY, the obtainment and use thereof. Kobilke, Hartmut (Germany). PCT Int. Appl. WO 2000052055 A1 20000908, 19 pp. DESIGNATED STATES: W: BY, CZ, DE, HU, JP, PL, SK, UA, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIXXD2. APPLICATION: WO 2000-DE547 20000221. PRIORITY: DE 1999-19910159 19990226.

AB The invention relates to specific egg yolk antibodies IgY and the obtainment and use thereof for immunotherapy in animal breeding and animal prodn. Pullets are immunized and repeatedly boostered over the entire laying period of twelve to thirteen months. The obtained IgY antibodies in the form of **whole egg powder**, egg yolk powder or lyophilisates are given to the **animal stock** via ready feed or drinking water. The IgY antibodies can be used as the basis in monospecific ELISA kits for assocd. diagnostics and titer quality control as well as for titer development.

=> s 116 and feed carrier

L18 0 L16 AND FEED CARRIER

=> s 116 and supplement

L19 8 L16 AND SUPPLEMENT

=> dup remove 119

PROCESSING COMPLETED FOR L19

L20 3 DUP REMOVE L19 (5 DUPLICATES REMOVED)

=> d 120 1-3 cbib abs

L20 ANSWER 1 OF 3 MEDLINE

2002125373 Document Number: 21848874. PubMed ID: 11860112. Effects of spray-dried whole egg and biotin in calf milk replacer. Quigley J D. (APC, Inc, Ames, IA 50010, USA.. jim.Quigley@amerprotcorp.com) . JOURNAL OF DAIRY SCIENCE, (2002 Jan) 85 (1) 198-203. Journal code: 2985126R. ISSN: 0022-0302. Pub. country: United States. Language: English.

AB Holstein bull calves (n = 120) were fed milk replacers containing 0, 10, or 20% of the formulation (0, 22, or 44% of crude protein) as spray-dried **whole egg powder** in a 56-d feeding trial.

Milk replacer was medicated with oxytetracycline and neomycin and was fed from d 1 to 42 of the study in a phase-fed program. All experimental milk replacers were supplemented with B vitamins, except biotin. One half of all calves were supplemented with 1 mg/kg of supplemental biotin to determine whether avidin in the egg protein product inhibited growth. Increasing spray-dried whole egg caused a linear reduction in body weight, body weight gain at 28 and 56 d of the study, calf starter intake, and feed efficiency. Calves fed milk replacers containing 0, 10, and 20% spray-dried whole egg gained an average of 486, 369, and 302 g/d, respectively, during the 56-d trial. Efficiency of feed utilization was 446, 318, and 231 g of body weight gain per kilogram of dry matter intake. Improvement in body weight and feed efficiency occurred when calves began consuming calf starter on d 29. Digestibility of protein or fat from egg may have been reduced during the trial; however, the addition of biotin to the milk replacer did not influence animal performance, suggesting that avidin in spray-dried whole egg was not responsible for impaired performance. The spray-dried whole egg product used in this study did not provide nutrients to support adequate growth of milk-fed calves.

L20 ANSWER 2 OF 3 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.DUPLICATE 2

97289887 EMBASE Document No.: 1997289887. Lignin as a purified dietary fiber supplement for piglets. Valencia Z.; Chavez E.R.. Dr. E.R. Chavez, Department of Animal Science, McGill University, 21,111 Lakeshore Rd.,

Ste. Anne de Bellevue, Que. H9X 3V9, Canada. Nutrition Research 17/10
(1517-1527) 1997.

Refs: 30.

ISSN: 0271-5317. CODEN: NTRSDC.

Publisher Ident.: S 0271-5317(97)00148-6. Pub. Country: United States.

Language: English. Summary Language: English.

AB A study with 32 Landrace x Yorkshire piglets weaned at 21 days of age was conducted to assess the effect of lignin on growth performance and blood metabolites mostly those related to lipid metabolism. Four dietary treatments were as follows: 1. Standard corn-soybean meal diet (control), 2. Control supplemented with 1.25% lignin, 3. High-cholesterol diet which included dried **whole egg powder**, dried skim milk and other ingredients to mimic a human high-cholesterol diet, 4. As diet 3 supplemented with 1.25% lignin. The diets were offered for 4 weeks. Pigs receiving the control diet were significantly ($p = 0.0054$) heavier and had better ($p=0.0038$) feed conversion than those fed the high-cholesterol diet. Lignin supplementation affected neither the live body weight of the piglets nor the feed efficiency. There was no significant difference in feed intake among the treatments. The plasma triglyceride levels were significantly ($p=0.0407$) reduced by lignin supplementation in the control and high cholesterol diets. Plasma cholesterol and high density lipoprotein cholesterol levels were significantly higher in piglets fed the high cholesterol diet as compared to those fed the control diet. Neither type of diet, nor lignin supplementation had a significant effect on plasma glucose or blood urea nitrogen levels. The results of the present study indicate that lignin supplementation has a hypolipemic but not hypocholesterolemic property when fed to the piglets.

L20 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2003 ACS

1967:35764 Document No. 66:35764 Determination of the biological protein value with Tetrahymena pyriformis. III. Effect of amino acid **supplements** and storage time on the protein values of cereal flours. Baum, Friedbert (Deut. Akad. Wiss., Berlin, Germany). Nahrung, 10(7), 571-80 (German) 1966. CODEN: NAHRAR. ISSN: 0027-769X.

AB cf. CA 66, 18031v. A study was made of the effect of certain limiting essential amino acids on the protein values of cereal flours prep'd. from the grain caryopses, employing T. pyriformis as test organism and **whole-egg powder** as reference protein; possible alterations in protein quality following long-term storage were also investigated. Protein values of corn, rice, and rye flours, as well as of oatmeal and the flours of several varieties of wheat were increased by the addn. of L-lysine (I). Although protein values were affected by the same concn. of I (1%) to differing extents in different varieties of wheat (60, 43, and 22% increases in German, Canadian, and Belgian wheat, resp.), no relation was established between the I effect and the I content of the wheat. Addns. of DL-methionine (II) increased protein values of rice, oats, and German wheat; while the simultaneous addn. of I and II to oats produced an increase in protein value, the same combination resulted in an inhibition of the favorable effect of I in corn, rice, and wheat. As with I, no relation could be established between the II effect on German wheat and the II content of this variety. Increasing concns. of amino acid **supplements** did not result in proportional increases in protein values: increases in such values brought about by 0.5 and 1.0% I were 28 and 60% in wheat and 72 and 72% in rice; although 0.5% I increased the protein value in corn, 1.0% I had no effect. Decreases of about 26-30% in the protein values were observed in corn, rice, rye, and wheat flours after 6 months of storage at room temp., whereas no alteration was detected in oatmeal under these conditions.

=> d his

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FILE 'MEDLINE, EMBASE, BIOSIS, SCISEARCH, CAPLUS' ENTERED AT 13:19:17 ON
19 APR 2003

L1 801 S EGG POWDER
L2 30 S L1 AND ANTIBODY
L3 7 S L2 AND FEED
L4 5 DUP REMOVE L3 (2 DUPLICATES REMOVED)
L5 12 DUP REMOVE L2 (18 DUPLICATES REMOVED)
L6 0 S L1 AND IGA
L7 5 S L1 AND IGM
L8 2 DUP REMOVE L7 (3 DUPLICATES REMOVED)
L9 253 S EGG ANTIBODY
L10 3 S L9 AND ALBUMIN
L11 3 DUP REMOVE L10 (0 DUPLICATES REMOVED)
L12 5 S EGG IGA
L13 2 DUP REMOVE L12 (3 DUPLICATES REMOVED)
L14 5 S FOWL IGA
L15 2 DUP REMOVE L14 (3 DUPLICATES REMOVED)
L16 309 S WHOLE EGG POWDER
L17 1 S L16 AND ANIMAL STOCK
L18 0 S L16 AND FEED CARRIER
L19 8 S L16 AND SUPPLEMENT
L20 3 DUP REMOVE L19 (5 DUPLICATES REMOVED)

=> s l16 and spray dried
L21 58 L16 AND SPRAY DRIED

=> s l21 and vaccinated hen
L22 0 L21 AND VACCINATED HEN

=> s l21 and immunized
L23 0 L21 AND IMMUNIZED

=> dup remove l21
PROCESSING COMPLETED FOR L21
L24 34 DUP REMOVE L21 (24 DUPLICATES REMOVED)

=> d l24 1-34 cbib abs

L24 ANSWER 1 OF 34 CAPLUS COPYRIGHT 2003 ACS
2003:178536 A novel egg product that shows anti-inflammatory effect in the rat adjuvant arthritis model. Xing, R.; Iyer, S. V.; Adalsteinsson, O.; Rockafellow, Rockafellow; Kintigh, Kintigh; Svoboda, M.; Hallman, J.; Carlson, R. P. (Arkion Life Science, Wilmington, DE, 19810, USA). Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003, AGFD-022. American Chemical Society: Washington, D. C. (English) 2003. CODEN: 69DSA4.

AB **Spray dried whole egg powder** was obtained from chickens repeatedly inoculated with 26 killed human enteric bacterial pathogens. These eggs were rich in Ig's of the IgY class directed against the human pathogens, and several immunoregulatory factors. We have isolated four of these immunoregulatory factors (Cytokine Activating Factors, CAF's), one of which is a 71 amino acid peptide with a unique sequence. The **whole egg powder** was tested in the established rat adjuvant arthritis model, where the rats were gavaged at various doses once a day from Day 9 - 29. At 100 mg/rat and 400mg/rat dose, the whole egg contg. CAF's showed anti-inflammatory activity and reduced paw edema ranging from 3-19% at Days 16, 23 and 30. The 200mg/rat dose however, the whole egg significantly reduced inflammation by 51%, 33%, and 51% on days 16, 23 and 30 resp. Some pos. correlations, esp. at days 16 and 23 (at the time of early and progressive joint inflammation), were obsd. regarding paw edema, plasma fibrinogen levels and joint histopathol. of the uninjected paw.

The pos. std. Indomethacin, at 1mg/kg produced significant changes (70-80% inhibition of inflammation) using a daily oral regimen from Day 16-29. The hyperimmune egg may be useful in playing a significant additive role in the treatment of chronic rheumatoid arthritis or other chronic inflammatory diseases by its antiinflammatory activity and a safer GI profile, as evidenced by histopathol. observations of the Peyer's patches.

L24 ANSWER 2 OF 34 SCISEARCH COPYRIGHT 2003 ISI (R)
2002:988134 The Genuine Article (R) Number: 620WL. Influence of spray drying conditions on functionality of dried whole egg. Franke K (Reprint); Kiessling M. Deutsch Inst Lebensmitteltech EV, POB 1165, D-49610 Quakenbruck, Germany (Reprint); Deutsch Inst Lebensmitteltech EV, D-49610 Quakenbruck, Germany. JOURNAL OF THE SCIENCE OF FOOD AND AGRICULTURE (DEC 2002) Vol. 82, No. 15, pp. 1837-1841. Publisher: JOHN WILEY & SONS LTD. BAFFINS LANE CHICHESTER, W SUSSEX PO19 1UD, ENGLAND. ISSN: 0022-5142. Pub. country: Germany. Language: English.

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Instead of traditional liquid eggs, more and more dried whole egg products are being used in the manufacture of fine bakery goods, since dried semi-finished products have some advantages regarding storage, handling and microbiological safety. However, the spray drying process leads to changes in sensitive egg components, eg proteins, and affects the functional properties of whole egg after reconstitution. Knowledge of the influence of drying conditions on the resulting functionality is necessary to enable the production of dried egg with tailor-made properties for applications in different food products. Some of these relationships were determined using a pilot spray dryer for drying experiments and an appropriate statistical evaluation of the results. It could be demonstrated that higher temperatures during spray drying lead to a considerable decrease in the foaming properties of **whole egg powder** but increase the capability of emulsion stabilisation. Additionally, a simplified example demonstrates the use of these relationships for the selection of optimal drying conditions of whole egg with respect to its application in a cake with higher fat content. (C) 2002 Society of Chemical Industry.

L24 ANSWER 3 OF 34 MEDLINE DUPLICATE 1
2002125373 Document Number: 21848874. PubMed ID: 11860112. Effects of **spray-dried** whole egg and biotin in calf milk replacer.
Quigley J D. (APC, Inc, Ames, IA 50010, USA..
jim.Quigley@amerprotcorp.com) . JOURNAL OF DAIRY SCIENCE, (2002 Jan) 85 (1) 198-203. Journal code: 2985126R. ISSN: 0022-0302. Pub. country: United States. Language: English.

AB Holstein bull calves ($n = 120$) were fed milk replacers containing 0, 10, or 20% of the formulation (0, 22, or 44% of crude protein) as **spray-dried whole egg powder** in a 56-d feeding trial. Milk replacer was medicated with oxytetracycline and neomycin and was fed from d 1 to 42 of the study in a phase-fed program. All experimental milk replacers were supplemented with B vitamins, except biotin. One half of all calves were supplemented with 1 mg/kg of supplemental biotin to determine whether avidin in the egg protein product inhibited growth. Increasing **spray-dried** whole egg caused a linear reduction in body weight, body weight gain at 28 and 56 d of the study, calf starter intake, and feed efficiency. Calves fed milk replacers containing 0, 10, and 20% **spray-dried** whole egg gained an average of 486, 369, and 302 g/d, respectively, during the 56-d trial. Efficiency of feed utilization was 446, 318, and 231 g of body weight gain per kilogram of dry matter intake. Improvement in body weight and feed efficiency occurred when calves began consuming calf starter on d 29. Digestibility of protein or fat from egg may have been reduced during the trial; however, the addition of biotin to the milk replacer did not influence animal performance, suggesting that avidin in **spray-**

dried whole egg was not responsible for impaired performance. The spray-dried whole egg product used in this study did not provide nutrients to support adequate growth of milk-fed calves.

- L24 ANSWER 4 OF 34 MEDLINE DUPLICATE 2
2001335553 Document Number: 21296141. PubMed ID: 11403475. Pressurized liquid extraction of lipids for the determination of oxysterols in egg-containing food. Boselli E; Velazco V; Caboni M F; Lercker G. (Dipartimento di Scienze degli Alimenti, Universita di Bologna, Italy.. eboselli@agrsci.unibo.it) . JOURNAL OF CHROMATOGRAPHY A, (2001 May 11) 917 (1-2) 239-44. Journal code: 9318488. Pub. country: Netherlands.
Language: English.
AB Pressurized liquid extraction (PLE, ASE) was compared with the Folch procedure (a solid-liquid extraction with chloroform/methanol 2:1, v/v) for the lipid extraction of egg-containing food; the accuracy of PLE for the quantitative determination of oxysterols in **whole egg powder** was evaluated. Samples of **spray-dried** whole egg, an Italian vanilla cake (Pandoro) and egg noodles were used. Two different extraction solvents (chloroform/methanol 2:1, v/v, and hexane/isopropanol 3:2, v/v) were tested at different extraction temperatures and pressures (60 degrees C at 15 MPa, 100 degrees C at 15 MPa, 120 degrees C at 20 MPa). No significant differences in the lipid recovery of the egg powder sample using PLE were found. However, PLE of the vanilla cake and egg noodles with the chloroform/methanol mixture was not selective enough and led to the extraction of a non-lipid fraction, including nitrogen-containing compounds. In the same samples, the pressurized hexane/isopropanol mixture gave a better recovery result, comparable to that obtained using the Folch method. Cholesterol oxidation products of the Folch extract and the pressurized liquid extract of **spray dried** egg powder (obtained with hexane/isopropanol 3:2, v/v, at 60 degrees C and 15 MPa) were determined by gas chromatography. PLE performed under these conditions is suitable to replace the Folch extraction, because the differences between the two methods tested were not statistically significant. Moreover, PLE shows important advantages, since the analysis time was shortened by a factor of 10, the solvent costs were reduced by 80% and the use of chlorinated solvents was avoided.

- L24 ANSWER 5 OF 34 SCISEARCH COPYRIGHT 2003 ISI (R)
2001:409579 The Genuine Article (R) Number: 431CC. Pressurized liquid extraction of lipids for the determination of oxysterols in egg-containing food. Boselli E (Reprint); Velazco V; Caboni M F; Lercker G. Univ Bologna, Dipartimento Sci Alimenti, Via S Giacomo 7, I-40126 Bologna, Italy (Reprint); Univ Bologna, Dipartimento Sci Alimenti, I-40126 Bologna, Italy; Univ Molise, DISTAAM, I-86100 Campobasso, Italy. JOURNAL OF CHROMATOGRAPHY A (11 MAY 2001) Vol. 917, No. 1-2, pp. 239-244. Publisher: ELSEVIER SCIENCE BV. PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS. ISSN: 0021-9673. Pub. country: Italy. Language: English.
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

- AB Pressurized liquid extraction (PLE, ASE) was compared with the Folch procedure (a solid-liquid extraction with chloroform/methanol 2:1, v/v) for the lipid extraction of egg-containing food; the accuracy of PLE for the quantitative determination of oxysterols in **whole egg powder** was evaluated. Samples of **spray-dried** whole egg, an Italian vanilla cake (Pandoro) and egg noodles were used. Two different extraction solvents (chloroform/methanol 2:1, v/v, and hexane/isopropanol 3:2, v/v) were tested at different extraction temperatures and pressures (60 degreesC at 15 MPa, 100 degreesC at 15 MPa, 120 degreesC at 20 MPa). No significant differences in the lipid recovery of the egg powder sample using PLE were found. However, PLE of the vanilla cake and egg noodles with the chloroform/methanol mixture was not selective enough and led to the extraction of a non-lipid fraction, including nitrogen-containing compounds. In the same samples, the

pressurized hexane/isopropanol mixture gave a better recovery result, comparable to that obtained using the Folch method. Cholesterol oxidation products of the Folch extract and the pressurized liquid extract of **spray dried** egg powder (obtained with hexane/isopropanol 3:2, v/v, at 60 degreesC and 15 MPa) were determined by gas chromatography. PLE performed under these conditions is suitable to replace the Folch extraction, because the differences between the two methods tested were not statistically significant. Moreover, PLE shows important advantages, since the analysis time was shortened by a factor of 10, the solvent costs were reduced by 80% and the use of chlorinated solvents was avoided. (C) 2001 Elsevier Science B.V. All rights reserved.

L24 ANSWER 6 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
3

2000:126623 Document No.: PREV200000126623. Effects of increasing amounts of Lupinus albus seeds without or with **whole egg powder** in the diet of growing pigs on performance. Van Nevel, C. (1); Seynaeve, M.; Van De Voorde, G.; De Smet, S.; Van Driessche, E.; De Wilde, R.. (1) Laboratory of Protein Chemistry, Institute for Molecular Biology and Biotechnology, Vrije Universiteit Brussel, Paardenstraat, 65, B-1640, Sint-Genesius-Rode Belgium. Animal Feed Science and Technology, (Feb. 18, 2000) Vol. 83, No. 2, pp. 89-101. ISSN: 0377-8401. Language: English. Summary Language: English.

AB In a growth trial with pigs, the effect of the inclusion of 150 and 300 g of Lupinus albus seeds/kg of feed in the diet was investigated. Parameters studied were: growth, feed utilization, digestibility of nutrients, slaughter and carcass characteristics. **Spray dried whole egg powder**, a specific inhibitor of lectins in L. albus seeds was also added (50 g/kg of feed), with the aim of verifying whether the unfavourable effects of high levels of lupin seeds could be neutralized. Feeding the diet containing 300 g of lupin seeds/kg lowered the average daily gain from 727 to 674 g and feed intake from 2.32 to 2.05 kg, while feed conversion ratio remained unaltered. The presence of **whole egg powder** in the lupin seed diets did not abolish the negative effects. Apparent faecal digestibility of most nutrients in the diets was not influenced by addition of lupin seeds or egg powder, except for the crude fat fraction, whereas the digestibility coefficient increased from 0.51 to 0.61. Crude fibre digestibility also increased, but only at the lowest lupin seed level. Carcass weight and dressing percentage were lower in the groups fed the highest lupin seed level. Fatty acid profile of backfat was determined and slightly higher proportions of C18:1 were observed when lupin seeds were fed. Possible reasons accounting for the lower performance of animals receiving lupin seeds are discussed, but the exact reason could not be derived from this experiment.

L24 ANSWER 7 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
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1998:369197 Document No.: PREV199800369197. Inhibitory action of **spray dried** blood plasma and **whole egg powder** on lectins in extracts of several legume seeds: A qualitative approach. Van Nevel, Christian (1); De Rycke, Herman; Beeckmans, Sonia; De Wilde, Roland; Van Driessche, Edilbert. (1) Lab. Protein Chem., Inst. Molecular Biol. Biotechnol., Vrije Univ. Brussel, Paardenstr. 65, B-1640 Sint-Genesius-Rode Belgium. Journal of the Science of Food and Agriculture, (July, 1998) Vol. 77, No. 3, pp. 319-326. ISSN: 0022-5142. Language: English.

AB Samples of seeds from eight legume species and Triticum vulgaris grains were extracted with buffer and lectin activity in the extracts was determined in hemagglutination experiments using normal or Pronase-treated rabbit erythrocytes. The effect of the addition of **spray dried** porcine and bovine plasma powder, **whole egg powder**, galactosides, whey powder and specific

inhibitors (eg mannose, galactose, N-acetyl galactosamine, fetuin) on hemagglutination activity (HA) was determined. Plasma powders were potent inhibitors of HA in extracts of *Pisum sativum*, *Vicia faba*, *Vicia sativa*, *Lens culinaris* and *Phaseolus vulgaris*. HA in extracts of *Lupinus* sp and *Phaseolus vulgaris* was efficiently decreased by **whole egg powder**, while the lectin of *Glycine max* could only be inhibited by addition of galactosides, whole and defatted milk powder and whey powder. Inhibitors (plasma and **whole egg powder** and fetuin) were subjected to SDS-PAGE and Western blotting and blots were incubated with biotinylated lectins, except for *Lupinus* lectin. Results of the HA experiments were confirmed: lectins which were not influenced by inhibitory compounds in HA experiments also showed no binding with proteins of the blotted inhibitor. There were strong indications that lectins were not bound to the albumin fraction of the plasma powders. Results are discussed in view of future *in vivo* experiments.

L24 ANSWER 8 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
5

1996:267110 Document No.: PREV199698823239. Storage properties of **whole egg powder** incorporated biscuit. Rao, T.
S. Satyanarayana (1); Ramanuja, M. H.; Ashok, N.; Vibhakar, H. S.. (1)
59/D5, ARKA, 2nd Main, Yadavagiri, Mysore-570 020 India. Journal of Food
Science and Technology, (1995) Vol. 32, No. 6, pp. 470-476. ISSN:
0022-1155. Language: English.

AB Protein-rich biscuits containing **spray dried egg** powder and flavours were packed in paper-aluminium (0.012 mm) foil polyethylene laminate pouches, biaxially oriented polypropylene and metallised polyester, for evaluating storage life at different temperatures. The changes in moisture, peroxide value, free fatty acids and TBA values during storage at different temperatures in different packaging materials were insignificant, as compared to those in freshly made biscuits. The biscuits with vanillin plus orange and vanillin plus pineapple flavours were found to be more stable at different temperatures, and were highly acceptable for a period of 6 months at 37 degree C, ambient temperature (1926 degree C) and at 4 degree C. as compared to those with orange flavour alone. Among packaging materials used, paper-aluminium foil polyethylene laminate pouch packed samples were more stable and acceptable, when compared to other packaging materials like metallised polyester and biaxially oriented polypropylene. The combinations of the above flavours were found to efficiently mask the egg flavour in the biscuits.

L24 ANSWER 9 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
6

1993:409147 Document No.: PREV199396074872. Effects of storage and various intrinsic vitamin E concentrations on lipid oxidation in dried egg powders. Wahle, Klaus W. J. (1); Hoppe, Peter P.; McIntosh, Gwen. (1)
Rowett Res. Inst., Greenburn Rd., Bucksburn, Aberdeen AB2 9SB UK. Journal of the Science of Food and Agriculture, (1993) Vol. 61, No. 4, pp. 463-469. ISSN: 0022-5142. Language: English.

AB Supplementing the diets of laying hens with 0, 25, 50, 75, 100 and 200 mg of all-rac-alpha-tocopheryl acetate (vitamin E) per kg of feed increased the concentration of this antioxidant in the eggs in a dose-dependent manner. Storage of **spray-dried whole-egg powders** at ambient temperature for up to 18 months resulted in gradual losses of vitamin E after 6 months, with the greatest losses occurring in those powders with the highest initial content. Marked changes in the concentration of products of lipid peroxidation (thiobarbituric acid reactive substances (TBARS), free fatty acids, oxidised fatty acids, peroxide values, oxysterols) occurred during the storage period which generally correlated inversely with the vitamin E content of the powder. The appearance, and sometimes disappearance, of the

products with storage time varied with the individual product. Oxidised fatty acids appeared at 0-2 months, free fatty acids at 48 months and TBARS at 8-12 months. 25-Hydroxycholesterol and cholestan-3,5,6-triol appeared at 2 months, peaked between 4 and 6 months and disappeared by 8 months. 7-beta-Hydroxycholesterol, 7-ketcholesterol and cholesterol-5,6-epoxide appeared at 4 months, peaked at 8-12 months and markedly declined by 18 months. Ingestion of certain lipid peroxidation products, particularly oxysterols which are generally regarded as cytotoxic, could be detrimental to health. Methods for preventing oxysterol formation in commercially prepared and stored foods by simply increasing the intrinsic vitamin E concentration of eggs, which are a major source of cholesterol, would benefit the food industry and human health.

L24 ANSWER 10 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
7

1993:477476 Document No.: PREV199396111076. Palatability of **spray-dried**, foam-mat-dried and freeze-dried **whole egg powders** packed in different packaging materials. Rao, T. S. Satyanaryana. Defence Food Res. Lab., Mysore 570 011 India. Journal of Food Science and Technology, (1993) Vol. 30, No. 4, pp. 298-300. ISSN: 0022-1155. Language: English.

AB Freeze-dried and foam-mat-dried whole hen's egg powders, prepared from egg melange of uniform composition, and commercial **spray-dried** egg powders were packed in cans and in flexible pouches with and without air. Drying conditions and packaging materials did not significantly influence the acceptability of egg powders during storage at 4 degree , 19-27 degree , 37 degree and 42 degree C in all three types of egg powders upto a period of one year.

L24 ANSWER 11 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
8

1993:27549 Document No.: PREV199395015749. Changes in solubility, beta-carotene and development of non-enzymatic browning of **spray-dried**, foam-mat-dried and freeze-dried **whole egg powders** packed in different packaging materials. Rao, T. S. Satyanarayana. Defence Food Research Laboratory, Mysore-570 011 India. Journal of Food Science and Technology, (1992) Vol. 29, No. 4, pp. 231-234. ISSN: 0022-1155. Language: English.

AB Drying conditions and packaging materials did not significantly influence solubility, destruction of beta-carotene and development of non-enzymatic browning of **spray-dried**, foam-mat-dried and freeze-dried egg powders during storage at 4, 19-27 and 37 degree C up to 365 days. However, the storage at 42 and 55 degree C had significant effect on these attributes in all the three types of egg powders packed in cans and flexible pouches.

L24 ANSWER 12 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
9

1991:317578 Document No.: BA92:28093. CHANGES IN PHOSPHOLIPID BROWNING OF HENS' **WHOLE EGG POWDER PACKED IN DIFFERENT PACKING MATERIALS**. RAO T S S. DEFENCE FOOD RES. LAB., MYSORE-570 011, INDIA.. J FOOD SCI TECHNOL, (1991) 28 (2), 120-122. CODEN: JFSTAB. ISSN: 0022-1155. Language: English.

AB Freeze-dried and foam-mat-dried hens' egg powders were prepared from egg melage of uniform composition and commercial **spray dried** egg powders were packed in cans and in flexible pouches under air and without air. Drying conditions and packing materials did not significantly influence the non-enzymatic browning of phospholipid fraction of egg powders during storage (control and at 19-27.degree. C) whereas high temperatures (55.degree. C, 42.degree. C and 37.degree. C) had significant effect on non-enzymatic browning reaction in all three types of egg powders packed in cans and in flexible pouches.

L24 ANSWER 13 OF 34 MEDLINE DUPLICATE 10
90118206 Document Number: 90118206. PubMed ID: 2609685. [The use of ionizing radiation for the decontamination of salmonella-containing slaughtered broiler chickens and powdered eggs]. Die Nutzung ionisierender Strahlen zur Dekontamination von salmonellenhaltigen Broilerschlachtkörpern und Eipulver. Kohler B; Hubner H; Krautschick M. ZEITSCHRIFT FÜR DIE GESAMTE HYGIENE UND IHRE GRENZGEBIETE, (1989 Nov) 35 (11) 665-8. Journal code: 0420111. ISSN: 0049-8610. Pub. country: GERMANY, EAST: German Democratic Republic. Language: German.

AB The effect of cobalt-60 gamma irradiation was investigated on the concentration of Salmonella (S.) typhimurium in artificial contaminated chicken carcasses and on the number of S. tennessee and S. agona in artificial contaminated **spray-dried whole egg powder** and liquid whole egg. Irradiation of carcasses and of liquid whole egg was carried out at deep frozen conditions between -10 degrees C and -18 degrees C and **whole egg powder** at 15-20 degrees C. The irradiation doses used were between 0.05 and 8.0 KGy. The D10-value of S. typhimurium in broiler chicks ranged between 0.57 and 0.74 and of S. agona respectively S. tennessee amounted to 0.95 and 1.07 in **spray dried whole egg powder** and 0.47 respectively 0.53 in whole egg content. Irradiation causes drastic reduction of physiological microflora in chicken carcasses. By radiation treatment using a dose of 4.0 KGy, germ count reductions by 3-5 decimal powers were achieved. Resistance of microbes increases in following succession: Pseudomonas spp., Salmonella spp., other Enterobacteriaceae spp., Micrococcus spp., Flavobacterium spp., yeasts, Bacillus spp., Streptomyces spp., fungi. Results of microbiological and sensorial examinations allow following conclusions: 1. Irradiation is highly effective against Salmonella. 2. Irradiation dose of 4.0 KGy is able to kill about 1 Million Salmonella bacteria per chicken. This guarantees safe elimination of natural occurring Salmonella bacteria in broiler chicken carcasses. 3. Irradiation of chicken carcasses up to 4.0 KGy causes no injury of quality, however storage longer than 4 months deteriorates sensorial qualities more than of unirradiated carcasses. (ABSTRACT TRUNCATED AT 250 WORDS)

L24 ANSWER 14 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 11
1990:47420 Document No.: BA89:24784. WATER BINDING ON EGG POWDERS BY INVERSE GAS CHROMATOGRAPHY WATER CLUSTER ANALYSIS. DEMERTZIS P G; KONTOMINAS M G. LAB. FOOD CHEM., DEP. CHEM., UNIV. IOANNINA, IOANNINA 54332, GREECE.. LEBENSM-WISSL TECHNOL, (1989) 22 (5), 228-232. CODEN: LBWTAP. ISSN: 0023-6438. Language: English.

AB Water sorption isotherms were constructed for two **spray dried** egg powders using inverse gas chromatography. Sorption data were analysed according to the Zimm-Lundberg cluster theory in an effort to gain insight into the mechanism of water build up in the egg powder matrix. Results show that water cluster formation begins at aw between 0.35 and 0.40 for the **whole egg powder** (WEP) and at aw between 0.50 and 0.60 for the defatted egg powder (DEP). Differences were related to hydrophobicity of both systems, that is water/water interactions were favored in the WEP system while water/protein interactions were favored in the DEP. The effect of temperature on cluster formation did not seem to be critical.

L24 ANSWER 15 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 12
1990:47419 Document No.: BA89:24783. CHANGES IN LIPIDS OF **SPRAY DRIED** FREEZE DRIED AND FOAM-MAT DRIED **WHOLE EGG POWDERS** DURING STORAGE. RAO T S S; MURALI H S. DEFENCE FOOD RES. LAB., MYSORE 570 011, INDIA.. LEBENSM-WISSL TECHNOL, (1989) 22 (5),

- 217-221. CODEN: LBWTAP. ISSN: 0023-6438. Language: English.
- AB Freeze dried and foam-mat dried hens' egg powder were prepared from egg melange of uniform composition and analysed for total lipids, free fatty acids, polar lipids, neutral lipids and 2-thiobarbituric acid values. Drying conditions, storage temperature and packaging materials significantly influence the extent of changes in lipids. The hydrolysis of egg lipids were observed even at low moisture in egg powders. During storage relative decrease in polar lipids was highest in foam-mat dried (FMD) and least in **spray dried** (SD) egg powders. The rate of autoxidation of egg lipids during storage increased with storage temperature and period.
- L24 ANSWER 16 OF 34 CAPLUS COPYRIGHT 2003 ACS
1988:569133 Document No. 109:169133 Study of moisture sorption of egg powders by inverse gas chromatography. Kontominas, M. G.; Demertzis, P. G. (Dep. Chem., Univ. Ioannina, Ioannina, 45332, Greece). Developments in Food Science, 17(Front. Flavor), 357-65 (English) 1988. CODEN: DFSCDX. ISSN: 0167-4501.
- AB Inverse gas chromatog. was used to study moisture sorption properties of two **spray dried** egg powders as a function of water activity, temp., and food structure. A considerably higher water uptake was obsd. in the defatted egg powder than in the **whole egg powder**. Sorption isotherms at different temps. were detd. to obtain thermodn. parameters of sorption. The thermodn. parameter values were less neg. for the **whole egg powder** than for the defatted one. Redn. of the water binding capacity in the **whole egg powder** is explained by masking of the sorption sites by the nonhygroscopic fat. The BET equation (Brunauer, S., et al., 1938) was applied to sorption isotherms and BET monolayer values were calcd.
- L24 ANSWER 17 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 13
1988:242810 Document No.: BA85:121212. STUDY OF WATER SORPTION OF EGG POWDERS BY INVERSE GAS CHROMATOGRAPHY. DEMERTZIS P G; KONTOMINAS M G. LAB. FOOD CHEM., DEP. CHEM., UNIV. IOANNINA, IOANNINA 45332, GREECE.. Z LEBENSM-UNTERS -FORSCH, (1988) 186 (3), 213-217. CODEN: ZLUFAR. ISSN: 0044-3026. Language: English.
- AB Inverse gas chromatography was used to study the water sorption properties of two **spray-dried** egg powders as a function of water activity, temperature and food composition. A considerably higher water uptake was observed in the defatted egg powder than in the **whole -egg powder**. Sorption isotherms at different temperatures were determined in order to obtain the thermodynamic parameters of sorption. The thermodynamic parameter values were less negative for the **whole-egg powder** than for the defatted powder. The reduction in water-binding capacity in the **whole-egg powder** is explained by the masking of the sorption sites by the non-hygroscopic fat. Both the BET and Freundlich equations were applied to the sorption isotherms, and the BET monolayer as well as the sorptive capacity values were calculated.
- L24 ANSWER 18 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 14
1988:132839 Document No.: BA85:67666. STUDIES ON THE **SPRAY-DRIED FOAM-MAT-DRIED AND FREEZE DRIED WHOLE EGG POWDERS** CHANGES IN THE NUTRITIVE QUALITIES ON STORAGE. RAO T S S; MURALI H S. DEFENCE FOOD RES. LAB., MYSORE-570011, INDIA.. NUTR REP INT, (1987) 36 (6), 1317-1324. CODEN: NURIBL. ISSN: 0029-6635. Language: English.
- AB No significant changes were observed in some of the key amino acids namely lysine, methionine, threonine, tryptophan and cystine and the protein efficiency ratio either due to methods of processing or due to storage of

whole egg powders prepared by spray drying, foam-mat-drying and freeze drying. A marked reduction in the nutritional quality of protein was observed in the omelette. A decrease in the solubility had no detrimental effect on the nutritive value of egg powders and it is established that there is a positive correlation co-efficient between (1) solubility and available lysine, (2) solubility and protein efficiency ratio and (3) available lysine and protein efficiency ratio.

L24 ANSWER 19 OF 34 CAPLUS COPYRIGHT 2003 ACS
1987:137261 Document No. 106:137261 A food modifier and a instant custard-flavor pudding containing the modifier. Koshida, Daikichi; Sugisawa, Akira; Matsui, Fumio; Yasuda, Mitsuru; Takagi, Yoshio; Ueda, Kenichi (House Food Industrial Co., Ltd., Japan). Jpn. Tokkyo Koho JP 61059707 B4 19861217 Showa, 6 pp. (Japanese). CODEN: JAXXAD.
APPLICATION: JP 1979-109031 19790829.

AB A food modifier to improve food dispersibility contains heat-denatured egg white powder such that the viscosity of 2% egg white powder soln. is 1.4-2.2 cp and that the turbidity of a 0.5% egg white powder soln. is 0.05-0.6. An instant custard pudding is prep'd. from the modifier, a gellation agent, and substances selected from milk powder, soybean protein powder, starch, **whole egg powder**, egg yolk powder and sugars. Thus, 20 kg defrozen egg white and 10 kg water were homogenized, jacket-heated at 70.degree. for 5 min, again homogenized at 150 kg/cm², and **spray dried** to give .apprx.2 g powder (the modifier) for use in the manuf. of instant custard puddings, hot cakes, etc.

L24 ANSWER 20 OF 34 CAPLUS COPYRIGHT 2003 ACS
1983:486910 Document No. 99:86910 **Whole egg powder**. (Kyu-Pi Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 58089138 A2 19830527 Showa, 3 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1981-185236 19811120.

AB Whole egg is mixed with >30% dextrin [9004-53-9] alc. and **spray -dried** to yield **whole egg powder** having good foaming properties.

L24 ANSWER 21 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
1969:40839 Document No.: BR05:40839. AN ELECTRONIC METHOD FOR PARTICLE SIZE DETERMINATION OF **SPRAY DRIED WHOLE EGG POWDER** ABSTRACT. REAGAN J G; DAWSON L E. Poult. Sci., (1968) 47 (5), 1710. CODEN: POSCAL. ISSN: 0032-5791. Language: Unavailable.

L24 ANSWER 22 OF 34 CAPLUS COPYRIGHT 2003 ACS
1966:476644 Document No. 65:76644 Original Reference No. 65:14339c-e Aggregation process and product. Swanson, Arthur M.; Fenske, Douglas J. (Dairy-Mour, Inc.). US 3262788 19660726, 7 pp. (Unavailable).

AB Dried egg products, wheat flour, various other foods, chemicals, or pharmaceuticals are mixed with **spray-dried** lactose, amorphous whey or modified amorphous whey, wetted by moist steam in a fast-moving zone, and quickly redried with dry, heated air. These difficult-to-agglomerate materials are thus made to form aggregates of larger particle size and random, porous structure which show improved flowability, wettability, dispersibility reconstitute easier in liquids, and do not cake. Addn. of 5-50% of the easily wettable material (lactose, etc.), rewetting with 2-6% added H₂O, redrying to original moisture level in a process which takes from 2-8 sec. is usually best. For example, 8 parts **spray-dried** whole egg was dry blended with 2 parts **spray dried** anhyd. lactose, the mixt. fed to a conventional agglomerator wherein the original moisture level was raised from 3.4 to 7.4% with moist steam in a fast-moving air stream, and then redried to 3.5% moisture with dry, heated air in another fast moving

stream. The redried product had an av. particle size of 180 .gamma., a bulk density of 0.33 g./cc., and showed marked improvement in flowability, wettability, and dispersibility over the original **spray-dried whole egg powder**.

L24 ANSWER 23 OF 34 CAPLUS COPYRIGHT 2003 ACS
1951:6972 Document No. 45:6972 Original Reference No. 45:1266b-c Effect of gas packing and storage temperature on the keeping quality of **spray-dried whole-egg powder**

. Prater, A. R. (Food Preservation Research Lab., Homebush, N.S.W.). Australian J. Appl. Sci., 1, 224-34 (Unavailable) 1950.

AB The storage life of dried egg powder, at temps. in the range 10-30.degree., was considerably extended by packing in CO₂. N gave a smaller extension. Oxygen uptake by the powder was detd. and the amt. absorbed at 20.degree. was highly correlated with palatability scores. A method for the detn. of dispersibility, based on shaking and centrifuging in a graduated tube, is described.

L24 ANSWER 24 OF 34 CAPLUS COPYRIGHT 2003 ACS
1948:32658 Document No. 42:32658 Original Reference No. 42:6952c-d Lysozyme activity of rehydrated, **spray-dried, whole-egg powder**. Hartsell, S. E. (Purdue Univ., West Lafayette, IN). Food Research, 13, 136-42 (Unavailable) 1948.

AB Lytic activity of dried egg powder decreased as the storage temp. increased but was not completely destroyed by exposure to 85.degree. for 90 min. Lysozyme activity was the same whether the eggs were stored in tin cans, carbon-liner packages, or grease-proof packages and whether the dried eggs were compressed or loosely packed. Many more lysozyme-resistant bacteria were present in stored egg powder than in the fresh egg powder.

L24 ANSWER 25 OF 34 CAPLUS COPYRIGHT 2003 ACS
1948:3180 Document No. 42:3180 Original Reference No. 42:694e-h Lifting power of dried whole egg when used in sponge cake. Miller, Cora F.; Lowe, Belle; Stewart, Geo. F. (Iowa Agr. Expt. Sta., Ames). Food Research, 12, 332-42 (Unavailable) 1947.

AB A com. **spray-dried** egg powder (5% moisture) did not form a foam when the powder was reconstituted and handled in the same manner as liquid shell-egg magma. A satisfactory foam and sponge cake was obtained by combining the meringue ingredients and slowly heating them to 68.degree., then surrounding the mixer bowl with a water bath at 80.degree. during the whipping of the foam. During storage at 37.degree. the following changes were observed: increase in denaturation of the egg protein (as shown by total sulphydryl groups exposed), decrease in pH of the egg magma, increase in beating time with a reduction in foaming power, reduction in cake vol., and a decrease in quality until the cakes made from the egg powder aged 28 days were considered inedible. Addn. of baking powder increased the vol. and tenderness of the cakes, increased flavor and texture scores of cakes from powders aged 14 and 28 days, but decreased the flavor and texture scores of cakes made from the unaged powder. One sample of **spray-dried, whole-egg powder** (less than 2% moisture), and powder dried from the frozen state under vacuum produced cakes comparable in quality to those made from fresh shell eggs.

L24 ANSWER 26 OF 34 CAPLUS COPYRIGHT 2003 ACS
1946:10478 Document No. 40:10478 Original Reference No. 40:1949c-f Effect of storage temperature on bacteria in egg powder. Stuart, L. S.; Goresline, Harry E.; Smart, Helen F.; Dawson, Virginia T. (Agr. Research Administration, U.S. Dept. Agr., Washington, DC). Food Industries, 17, 1174-5, 1266, 1268, 1270, 1272, 1274 (Unavailable) 1945.

AB At temps. of 86.degree.F. or lower the rate of bacterial death in **spray-dried whole-egg powder**

of high sanitary quality was normal for bacterial populations of dry material. Above 86.degree.F. there was a secondary accelerated death rate. In egg powders of low sanitary quality, there was a secondary accelerated death rate at temps. as low as 86.degree.F. These secondary death rates were attributed to extracellular factors resulting from chem. changes in the powder itself. Evidence of advanced progress in bacterial cell catabolism appeared in powder of high sanitary quality when stored more than 2 weeks at 86.degree.F. or 24 weeks at 50.degree.F. With powders of low sanitary quality those changes appeared after storage for longer than 2 weeks at a temp. of 75.degree.F. or 12 weeks at 50.degree.F. or higher, or 24 weeks at 32.degree.F. The highest temp. at which an av. quality egg powder could be stored for 48 weeks without showing pronounced evidence of bacterial cell catabolism was about 45.degree.F. A temp. of 32.degree.F. appeared safer.

L24 ANSWER 27 OF 34 CAPLUS COPYRIGHT 2003 ACS

1945:30587 Document No. 39:30587 Original Reference No. 39:4988d-e

Microbiological control in the production of **spray-dried**

whole-egg powder. McFarlane, Vernon H.;

Watson, Alice J.; Gorseline, Harry E. U.S. Egg & Poultry Mag., 51, 250-7, 270-3, 275-7, 279-86 (Unavailable) 1945.

AB Each step is dealt with individually in detail on its influence on quality of product. The significance of microbiological counts is interpreted. Methods for plate (viable cell) and direct microscopic counts and tests for *E. coli* are detailed.

L24 ANSWER 28 OF 34 CAPLUS COPYRIGHT 2003 ACS

1945:19571 Document No. 39:19571 Original Reference No. 39:3084g-i Quality of egg powder affects rate of change in solubility. Stuart, L. S.; Goresline, Harry E.; Smart, Helen F.; Dawson, Virginia T. Food Industries, 17, 154-6, 242 (Unavailable) 1945.

AB The soly. of **spray-dried whole egg powder** decreased during storage at all temps. from 0.degree. to 110.degree.F. **Whole egg powder** of low sanitary quality, as detd. by cell count, decreased in soly. to a greater extent and at a much more rapid rate than powder of high sanitary quality. No differences were noted in the soly. of powders made from U.S. Standard and U.S. Extra shell grades. Powder made from U.S. Trades lost their soly. more rapidly than powder made from better-grade eggs when stored at temps. of 98.degree. and 110.degree.F. Temps. of 45.degree.F. or less were necessary to prevent marked decreases in soly. in powder of high sanitary quality. In powders of low sanitary quality, marked decreases in soly. occurred even at 0.degree.F.

L24 ANSWER 29 OF 34 CAPLUS COPYRIGHT 2003 ACS

1945:10899 Document No. 39:10899 Original Reference No. 39:1699f-h The bacteriology of stored, dried egg powder. Hartsell, S. E. Food Research, 9, 505-11 (Unavailable) 1944.

AB The type of package (tin can, greaseproof cartons or the carton plus a carbon liner) did not influence the bacterial flora of **spray-dried, whole-egg powder** stored 3 months at 0-37.degree.. Compression may reduce the total count slightly but had no influence on the genera surviving in the stored samples. Incubation temp. of 32.degree. gave much higher total bacterial counts and more successful isolations than 37.degree.. Standard nutrient agar, as used for milk analysis, to which 1% fresh yeast infusions was added, was found to be a desirable medium for detg. the total bacterial count of dried **whole-egg powder**. As the storage temp. increased, the total bacterial count decreased. About 30 species of bacteria were found in the stored powder. The bacteria found most frequently belonged to the genus *Bacillus*.

L24 ANSWER 30 OF 34 CAPLUS COPYRIGHT 2003 ACS

1944:10469 Document No. 38:10469 Original Reference No. 38:1574a-b Dried whole egg powder. IX. Effect of drying conditions on quality. Woodcock, A. H.; Reid, Margaret Can. J. Research, 21D, 389-93 (Unavailable) 1943.

AB The quality of egg powder, spray dried in a small lab. drier, was improved as the exhaust air temp. decreased from 76.degree. to 62.degree.. Reducing the inlet temp. from 124.degree. to 107.degree. had no effect on the fluorescence of KCl values of the product, but improved the refractometric value, palatability, and cake vol., and lowered the rate of production. Reduction of the inlet temp. to 79.degree. lowered the quality.

L24 ANSWER 31 OF 34 CAPLUS COPYRIGHT 2003 ACS
1944:42712 Document No. 38:42712 Original Reference No. 38:6410b-d Some factors affecting the storage changes in spray-dried egg products. Stewart, George F.; Best, Leo R.; Lowe, Belle Proc. Inst. Food Tech. 77-89 (Unavailable) 1943.

AB Dried egg albumin exhibits greater stability when glucose is removed; such treatment, however, has little effect on the keeping quality of egg yolk. Drying albumin and whole eggs to moisture levels of 0.5 to 1.0% increases keeping qualities; similar treatment does not affect the keeping qualities of egg yolk. Storage at temps. above 30.degree. accelerates loss of soly. and palatability (as judged by fluorescence measurements). Whole egg powders dried to less than 1% moisture from liquid egg adjusted to pH 6.5 are superior to eggs of 4-5% moisture and normal pH.

L24 ANSWER 32 OF 34 CAPLUS COPYRIGHT 2003 ACS
1943:15101 Document No. 37:15101 Original Reference No. 37:2475i pH measurements with spray-dried whole-

egg powder. Stuart, L. S.; Goresline, Harry E.; Dicks, Edna E. U. S. Egg Poultry Mag., 48, 634-5,662 (Unavailable) 1942.

AB The pH of dried whole egg, either fresh or stored 6 months at room temp., increases on diln. and is higher in fresh egg. With diln. 1 g. in 4 g., the averages are 8.12 and 7.00, and with 1 g. in 100 g., 8.56 and 7.64, resp., for fresh and storage powders.

L24 ANSWER 33 OF 34 CAPLUS COPYRIGHT 2003 ACS
1943:15102 Document No. 37:15102 Original Reference No. 37:2475i,2476a-d Storage changes in spray-dried whole-

egg powder. Stuart, L. S.; Hall, H. H.; Dicks, Edna E. U. S. Egg Poultry Mag., 48, 629-33,658 (Unavailable) 1942.

AB Eggs were stored at 30.degree. exposed to varying relative humidities from 20 to 100% for 60 days. All samples arrived at const. wt. except those at 90, 95 and 100% humidities. No bacterial growth occurred with humidities of 90% or less, or with 10% or less H₂O content, but did occur at 20% H₂O. With 95 and 100% humidities growth was almost entirely aerobic spore-formers. Most samples of dried eggs are free from coliform types, but it appears that when present they remain viable on storage. Bacterial death appears to be greater as H₂O is reduced from 5%. The reverse seems to be true with H₂O over 5%, until it becomes high enough to permit growth. Visual mold developed at humidities of 90% and over, and on all samples with H₂O over 8.76%. Changes in soly. are greater with H₂O over than when under 5%, and marked decreases may occur independent of changes in acidity of fat, formol N value, or total free carboxyl groups. Acidity of fat did not increase at humidities less than 85%. At 85% and H₂O of 8.66% a slight increase was assocd. with microbial activity. With humidities of 90, 95 and 100%, and resp. H₂O contents of 9.96, 20.98 and 33.74%, there were tremendous increases assocd. with marked increases of lipolytic organisms. Increase in formol N and free carboxyl can be attributed to microbial growth. As humidity or H₂O increased, pH decreased, the higher the H₂O, the greater the decrease. The most important single factor in preservation of quality during storage is

control of H₂O content. Dried egg should be produced at 5% or less H₂O and H₂O absorption prevented.

L24 ANSWER 34 OF 34 CAPLUS COPYRIGHT 2003 ACS
1942:44895 Document No. 36:44895 Original Reference No. 36:7164f-i

Solubility of spray-dried whole egg

powder. Stuart, L. S.; Grewe, Emily; Dicks, Edna E. U. S. Egg Poultry Mag., 48, 498-503, 524-6 (Unavailable) 1942.

AB Comparison is made of results obtained by two methods for soly. of dried egg powder with the amt. of total N and crude albumin N and with suitability for making scrambled eggs and pound cake. The "centrifuged heat coagulable soly. index" and "Esbach's sedimentation soly. index" are, resp., the measure of pptn. obtained by heat or by a picric and citric acid mixt. in the filtrate from aq. soln. of the egg under standardized conditions. Results can be roughly interpreted in terms of percentage of soly. based on amt. of sol. albumin N present. The methods appear to have a definite value in detg. the quality of freshly dried whole egg from the standpoint of consumer quality. Insoly. is of 2 kinds: process and storage. Egg powder immediately after drying should show at least 75% soly. to give cooking results comparable to fresh eggs. Powder with 50% soly. is possibly acceptable although inferior in quality. However, with stored dried egg this may need to be lowered.

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FILE 'MEDLINE, EMBASE, BIOSIS, SCISEARCH, CAPLUS' ENTERED AT 13:19:17 ON 19 APR 2003

L1 801 S EGG POWDER
L2 30 S L1 AND ANTIBODY
L3 7 S L2 AND FEED
L4 5 DUP REMOVE L3 (2 DUPLICATES REMOVED)
L5 12 DUP REMOVE L2 (18 DUPLICATES REMOVED)
L6 0 S L1 AND IGA
L7 5 S L1 AND IGM
L8 2 DUP REMOVE L7 (3 DUPLICATES REMOVED)
L9 253 S EGG ANTIBODY
L10 3 S L9 AND ALBUMIN
L11 3 DUP REMOVE L10 (0 DUPLICATES REMOVED)
L12 5 S EGG IGA
L13 2 DUP REMOVE L12 (3 DUPLICATES REMOVED)
L14 5 S FOWL IGA
L15 2 DUP REMOVE L14 (3 DUPLICATES REMOVED)
L16 309 S WHOLE EGG POWDER
L17 1 S L16 AND ANIMAL STOCK
L18 0 S L16 AND FEED CARRIER
L19 8 S L16 AND SUPPLEMENT
L20 3 DUP REMOVE L19 (5 DUPLICATES REMOVED)
L21 58 S L16 AND SPRAY DRIED
L22 0 S L21 AND VACCINATED HEN
L23 0 S L21 AND IMMUNIZED
L24 34 DUP REMOVE L21 (24 DUPLICATES REMOVED)

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L25 0 L24 AND SOYBEAN HULL

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L26 967 SOYBEAN HULL

=> s l26 and pasteurized whole egg
L27 0 L26 AND PASTERIZED WHOLE EGG

=> s 126 and whole egg powder
L28 0 L26 AND WHOLE EGG POWDER

=> s 126 and egg supplement
L29 0 L26 AND EGG SUPPLEMENT

=> s feed additive
L30 9093 FEED ADDITIVE

=> s 130 and whole egg powder
L31 3 L30 AND WHOLE EGG POWDER

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PROCESSING COMPLETED FOR L31
L32 3 DUP REMOVE L31 (0 DUPLICATES REMOVED)

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L32 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2003 ACS
2001:865977 Document No. 136:278430 Binding of biotinylated legume seed lectins with glycoproteins in blotted receptor-analogs: influence of incubation pH. Van Nevel, C. J.; De Rycke, H.; Beeckmans, Sonia; De Wilde, R.; Van Driessche, E. (Laboratory for Protein Chemistry, Institute for Molecular Biology and Biotechnology, Vrije Universiteit Brussel, Sint-Genesius-Rode, B-1640, Belg.). Animal Feed Science and Technology, 94(3-4), 147-153 (English) 2001. CODEN: AFSTDH. ISSN: 0377-8401.

Publisher: Elsevier Science B.V..

AB SDS-PAGE and Western blotting of lectin inhibitors (bovine and porcine plasma powder, **whole egg powder** and fetuin) was performed and blots were incubated with several biotinylated lectins com. available (*Phaseolus vulgaris* L, *Pisum sativum*, *Lens culinaris*, *Vicia faba*). In order to study the effect of pH on the binding of the lectins to glycoproteins present in the inhibitors, identical blots were incubated in buffers with different pH values, i.e. 3-7, resp. Binding capacity of lectins to the glycoproteins in the inhibitors was very dependent on pH condition during incubation: for all the lectins involved in this expt., pH values lower than 4 inhibited the binding process considerably. Results are discussed taking into account the low pH values prevailing in the stomach of pigs.

L32 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS
2000:628181 Document No. 133:192000 Specific egg yolk antibodies IgY, the obtainment and use thereof. Kobilke, Hartmut (Germany). PCT Int. Appl. WO 2000052055 A1 20000908, 19 pp. DESIGNATED STATES: W: BY, CZ, DE, HU, JP, PL, SK, UA, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (German). CODEN: PIIXD2. APPLICATION: WO 2000-DE547 20000221. PRIORITY: DE 1999-19910159 19990226.

AB The invention relates to specific egg yolk antibodies IgY and the obtainment and use thereof for immunotherapy in animal breeding and animal prodn. Pullets are immunized and repeatedly boostered over the entire laying period of twelve to thirteen months. The obtained IgY antibodies in the form of **whole egg powder**, egg yolk powder or lyophilisates are given to the animal stock via ready feed or drinking water. The IgY antibodies can be used as the basis in monospecific ELISA kits for assocd. diagnostics and titer quality control as well as for titer development.

L32 ANSWER 3 OF 3 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
2000:126623 Document No.: PREV200000126623. Effects of increasing amounts of *Lupinus albus* seeds without or with **whole egg powder** in the diet of growing pigs on performance. Van Nevel, C. (1); Seynaeve, M.; Van De Voorde, G.; De Smet, S.; Van Driessche, E.; De

Wilde, R.. (1) Laboratory of Protein Chemistry, Institute for Molecular Biology and Biotechnology, Vrije Universiteit Brussel, Paardenstraat, 65, B-1640, Sint-Genesius-Rode Belgium. Animal Feed Science and Technology, (Feb. 18, 2000) Vol. 83, No. 2, pp. 89-101. ISSN: 0377-8401. Language: English. Summary Language: English.

AB In a growth trial with pigs, the effect of the inclusion of 150 and 300 g of Lupinus albus seeds/kg of feed in the diet was investigated. Parameters studied were: growth, feed utilization, digestibility of nutrients, slaughter and carcass characteristics. Spray dried **whole egg powder**, a specific inhibitor of lectins in L. albus seeds was also added (50 g/kg of feed), with the aim of verifying whether the unfavourable effects of high levels of lupin seeds could be neutralized. Feeding the diet containing 300 g of lupin seeds/kg lowered the average daily gain from 727 to 674 g and feed intake from 2.32 to 2.05 kg, while feed conversion ratio remained unaltered. The presence of **whole egg powder** in the lupin seed diets did not abolish the negative effects. Apparent faecal digestibility of most nutrients in the diets was not influenced by addition of lupin seeds or egg powder, except for the crude fat fraction, whereas the digestibility coefficient increased from 0.51 to 0.61. Crude fibre digestibility also increased, but only at the lowest lupin seed level. Carcass weight and dressing percentage were lower in the groups fed the highest lupin seed level. Fatty acid profile of backfat was determined and slightly higher proportions of C18:1 were observed when lupin seeds were fed. Possible reasons accounting for the lower performance of animals receiving lupin seeds are discussed, but the exact reason could not be derived from this experiment.

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1: Arch Tierernahr 1997;50(4):369-80

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[Systemic availability of bovine immunoglobulin G and chicken immunoglobulin Y after feeding colostrum and whole egg powder to newborn calves]

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Erhard MH, Gobel E, Lewan B, Losch U, Stangassinger M.

Institut fur Physiologie, Physiologische Chemie und Tierernahrung, Tierarztlichen Fakultat, Ludwig-Maximilians-Universitat Munchen, Germany.

Related
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In connection with a study on the prophylaxis of infectious diarrhea with specific egg yolk antibodies, the systemic availability of colostral bovine immunoglobulin G (bIgG) and chicken immunoglobulin Y (IgY) after feeding egg powder was investigated on 26 newborn calves from 23 different farms. Blood was sampled daily and at the same day time from these calves in the first 14 days of life. During the feeding of colostrum, the mean bIgG concentration was highest at day 1 post natum with a value of 9.3 mg/ml serum. Thereafter, the mean bIgG level was reduced continuously to a significant lower concentration of 4.9 mg/ml serum at day 12 post natum and remained nearly constant at 5.2 mg/ml till to the end of the observation period. Total protein concentrations in the serum did not change and plateaued at a mean value of 56.2 mg/ml (SD 11.2). The number of colostrum meals had no significant effect on the mean bIgG concentrations during that period. The individual variation of bIgG concentrations was very high on every day of the sampling period. The mean coefficient of variation was at 52.1 % (SD 5.7). After having described the individual bIgG concentration curves mathematically with a regression curve, two groups with significantly different bIgG elimination constants (k) could be obtained. Thus in one group ($n = 10$) with k -values of < -0.02 a mean half time of serum bIgG of 24.3 days (SD 4.6) was calculated. In the other group of calves ($n = 16$) with elimination constants of $k > -0.02$, a mean half time of 68.5 days (SD 36.7) could be calculated, possibly because these calves started earlier with their endogenous bIgG production. Additionally, to 18 of these calves 20 g egg powder with an IgY concentration of 15 mg/g was fed up to day 14. Calves had a maximal mean IgY concentration of 1.9 micrograms/ml serum if egg powder feeding started already during the first 12 hours of life. Starting at a later time resulted in a significant reduction of IgY levels. For example, the mean initial IgY concentration dropped to 0.035 micrograms/ml serum after having had the first egg powder application between 25 and 48 hours post natum. Using the individual IgY

elimination constant derived from a regression analysis ($r^2 = 0.84$) of the IgY concentration curve, a mean IgY half time of 5.0 days (SD 2.5) could be calculated. To prevent the absorption of heterologous antibodies and consecutively, also to prevent a possible systemic effect, egg powder for prophylactic purposes in newborn calves should be fed after the first 24, better 48 hour, post natum. Most important for the prophylactic effect of specific antibodies on infectious diarrhea is not their systemic but their high local intestinal availability.

PMID: 9735102 [PubMed - indexed for MEDLINE]



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